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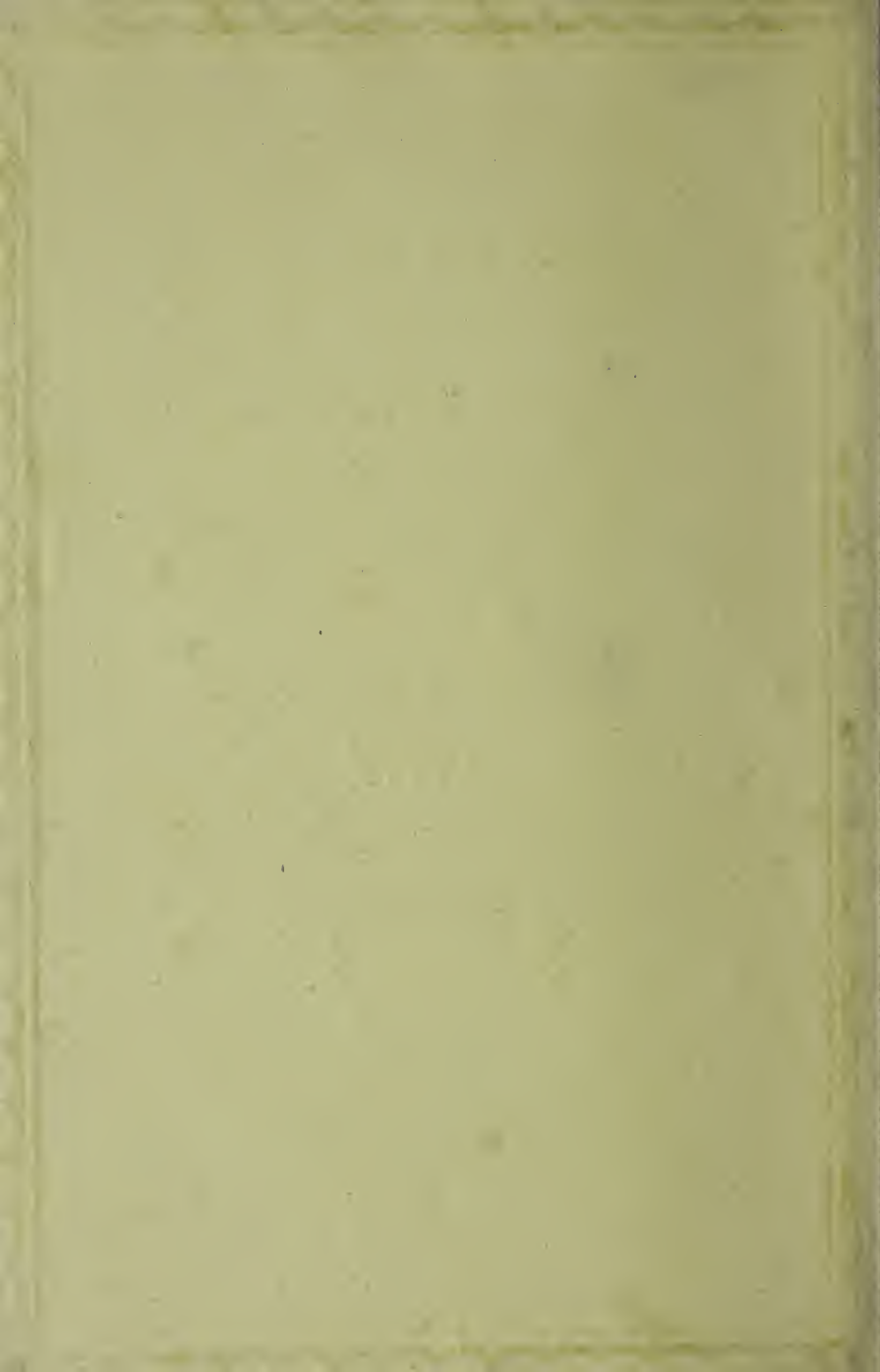
HARMONIOUS COLOURING
AS APPLIED TO
PHOTOGRAPHS.



NEWMAN.

1/-

SECOND EDITION



Philip: L. Parsons.

Leamington

1861 -

83/24

HARMONIOUS COLOURING,

ESPECIALLY AS

APPLIED TO PHOTOGRAPHS.



THE
PRINCIPLES AND PRACTICE
OF
HARMONIOUS COLOURING,
IN
OIL, WATER, AND PHOTOGRAPHIC COLOURS,
ESPECIALLY AS
APPLIED TO PHOTOGRAPHS
ON
PAPER, GLASS, AND SILVER-PLATE.

BY
AN ARTIST-PHOTOGRAPHER.

SECOND EDITION.



LONDON:
W. KENT & CO., 51 & 52, PATERNOSTER ROW;
AND
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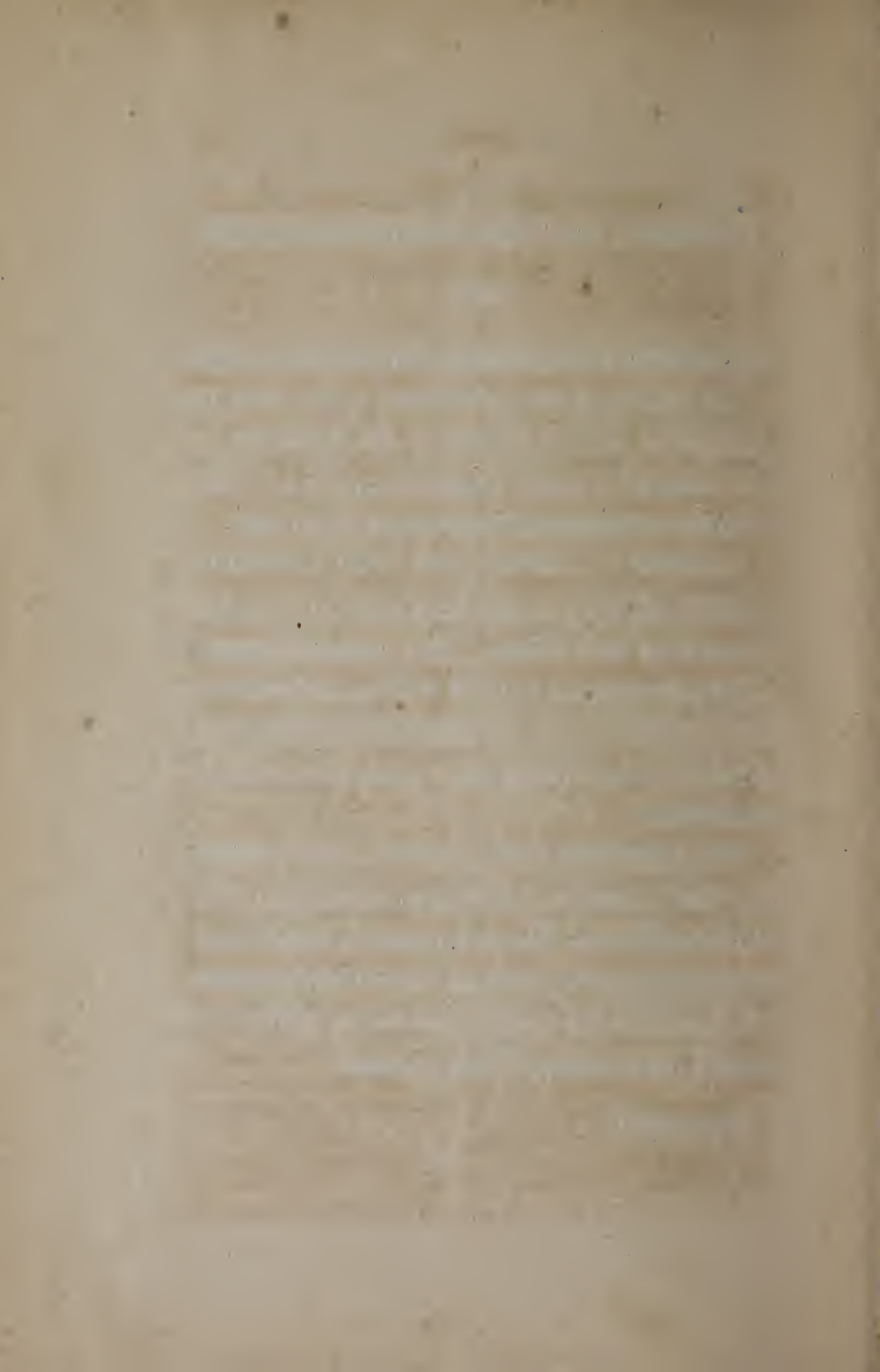
PREFACE TO THE SECOND EDITION.

IN preparing a second edition for the press, within a few months of the publication of the first, the Author has availed himself of the opportunity of correcting a few minor inaccuracies, and of adding fresh matter in several departments of the work.

To extend its usefulness, and bring it within the reach of all, the price has been reduced from half-a-crown to one shilling. The coloured diagram which accompanied the first edition as frontispiece has been withdrawn ; but the additional matter now given, it is hoped, will more than compensate for its absence.

The Author has much pleasure in acknowledging the kind reception and high commendation which the first edition of this work received, both from the Photographic Press, and from Art and other Journals. He trusts that the present and future editions will be still more worthy of their approval.

August, 1859.



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INTRODUCTION.

PHOTOGRAPHY may be said to have presented itself to the world almost without introduction. Consider-^{Rise and rapid progress.}ably less than twenty years ago sun pictures were first heard of, and were then as rare as they were wonderful. They had scarcely ceased to be regarded as curiosities before society was flooded with them, with a prodigality altogether unparalleled in the history of pictorial art.

Unfortunately, improvement in style has scarcely^{Tardy improvement.} kept pace with prolificacy of production; and in matters pertaining to art, quantity is but a poor substitute for quality. This tardiness in improvement is, perhaps, not difficult to understand. Photography is the offspring of science, not of art; and artists have felt much disposed to regard it as an illegitimate upstart trenching upon their province, and claiming a large share of what art had hitherto regarded as its inalienable inheritance. They have thus looked upon it with something of the same spirit with which handicraftsmen in the mechanical trades have ever regarded the progress of the machinery which promised to declare their occupation

Jealousy of
artists.

gone. Standing apart, they have watched with sullen jealousy its progress, and marked with satisfaction its deficiencies, in some of the essentials of their art. Meanwhile, scientific men have devoted themselves to simplifying the processes, and improving the machinery requisite for its practice. Competitive commerce has contributed its quota in cheapening the materials and apparatus; and, fascinated by the facilities thus afforded, of securing pictorial representations of anything and everything, animate or inanimate, thousands of votaries have given themselves up to the new study with an ardour and enthusiasm which have only been equalled by their utter ignorance of true art or its requirements. Nay, more; many, carried away by the strong parental instinct, as regarded their photographic bantlings, and transported by the beauties of their own handiwork, have been ready to defy their artistic challengers, and lay down new canons of pictorial beauty, "believing," as a recent writer caustically remarks, "that art has hitherto been but a blundering groper after that truth which the cleanest and precisest photography in their hands was now destined to reveal!"

Ignorance of
art amongst
photo-
graphers.

Presuming that the majority of the readers of these pages are photographers, professional or amateur, themselves producing the pictures they wish to colour, we think it desirable, at the outset,

to urge upon their attention the importance of greater artistic culture than most of them have hitherto possessed, or deemed necessary. A cardinal blunder with them has been the supposition that a good photograph must necessarily be a perfect representation of nature, and that such an imitation of nature as the photograph presented must be the highest triumph of art. Passing by, for the present, the first assumption, or, for the moment, for argument's sake, admitting it to be true, we must submit that Nature has many aspects, but not all equally beautiful. As regards portraiture, the living model is seen in ever-shifting positions, and ever-varying aspects of light and shade, very few of which, however, it may be, would be suitable for portraiture, notwithstanding that they are all natural. That a portrait should be what some call natural does not, therefore, by any means imply that it is perfect as a picture. It may be natural that a person should at some time wink, smirk, or frown, that he should occasionally stoop, loll, or stretch himself; but no one would for a moment dream of perpetuating these actions in a portrait. Notwithstanding, we have seen many photographic portraits in positions little better. Sitters placed upon a chair bolt upright, with head, body, and limbs in one line, a hand thrust forward sprawling on each knee, all arranged with such accuracy

More artistic
culture neces-
sary.

Varied
aspects of
Nature.

Bad posing.

that if the figure were cleft down the middle, the halves would weigh the same to a fraction! The expression accompanying this position being generally either one of the most listless fatuity, or, with every muscle on the strain, the eyes glaring, and the features contracted to a most diabolical frown, the idea is conveyed that the sitter is just gathering his energies for a fatal spring upon some victim. Others, again, carefully avoiding these enormities in arranging the sitter, affect positions of unstudied ease and carelessness, in which, however, everything like grace or dignity is alike wanting.

Embodiment
of character.

Nature, then, having such varied aspects, the aim of the true artist is to portray her in such aspects as best secure the embodiment of character in the model, combined with pleasing pictorial effect. It is here the painter possesses a great advantage over the photographer. It is on record that Sir Thomas Lawrence had fifty sittings for a portrait of the Duke of Wellington, and more than that for some others. Sir Joshua Reynolds had fifty sittings from Sir George Beaumont for one portrait, and as many from some other sitters. It will not be supposed for one moment that all this time was required for producing an accurate drawing of the model: the object was, to embody in the painting that expression which should most happily depict the character of the sitter. And

whilst any attempt to rival art in this respect would be as foolish as useless, there is no reason why the photographer who desires to produce something beyond mere facial maps and diagrams should not Facial maps. understand in what true success in art consists, and also attempt to approximate in some degree thereto. This will only be attained by aiming at a higher standard of artistic culture, and a thorough knowledge of the conditions of success. A happy accident, it is true, even in ignorant hands, will Accidental success. occasionally achieve the very best results, somewhat on the principle illustrated by the story in Pliny, where the throwing of a sponge, charged with colour, at the canvas, finished the foam on a dog's mouth so that it could not be improved. The painter might almost as well expect a successful repetition of this experiment, as the photographer without artistic knowledge and feeling to produce uniformly good results.

The photographer must not only give up his favourite notion, that he has only to depict nature to succeed, but also that the most perfect photograph is necessarily an accurate reproduction of Nature as she is seen. The best product of the camera, unaided by art, is often very far indeed from being a transcript of nature. The principles of photography, both chemical and optical, combine to render this inevitable. The intense photogenic action of

Photography
often untrue,

some colours, and the almost entire absence of such action in others, chemically, and the necessary undue enlargement of advancing objects and diminution of retiring ones, mechanically, combine to remove the photograph as far from nature as many imagine the painting to be ; the difference being, that whilst it is the province of art to soften peculiarities, photography very often exaggerates them. The incipient wrinkle or trifling scar, which in nature is, it may be, hid by the brilliancy of complexion ; the slight freckle, which to the eye varies so little from the general tint of the skin as scarcely to excite observation, are at once searched out by the one huge cyclopean eye of the camera, and rendered with uncompromising distinctness in black and white. The red or golden tresses appear with raven blackness, whilst the blue eye, which in the photograph is as colourless as water, seems to have lost in depth of colour what the hair has gained. The most enthusiastic photographer has often felt his failure here, and has here acknowledged that the aid of art, in colouring, is pre-eminently needed. Again, it is a principle of art that the most important part of a picture should be best done, that in a portrait other parts should be so subordinated as to give due prominence to the head ; and herein it is true to nature. It is on the faces of those around us we look, whether we speak or listen ; it

is there we look for the varying expression and development of character, and it would speak little for any of whom in their absence we remembered more of their dress than face. Photography, however, in its most perfect forms, knows no such discrimination. Every button, fold, and flounce is distinctly portrayed; the varying texture of silk or satin, velvet or cloth, is rendered with surprising accuracy; whilst the head, if not certainly worse done than the rest, is certainly worse in proportion, so that it appears no more important than, if not really subordinate to, the other parts of the picture. A painting of this description once under criticism, received its due meed of praise; the several parts were separately commended, the position, the draperies, &c., after which the critic exclaimed: "Why, bless me, here's a head too!"

In thus referring to the defects of photographic pictures, we must not be understood to depreciate photography: we simply insist on the necessity of the artistic element in applying it. We deny entirely that photographic portraits *necessarily* represent the sitter as having just gazed on the Gorgon's head. Let the photographic operator, whilst availing himself of every improvement in manipulation, acquaint himself with the laws by which the painter secures the semblance of nature; let him learn how to arrange his subject, and choose his point of view;

Photography
undiscrimi-
nating.

What to
learn.

how to secure a proper balance of light and shade ; in short, how to produce a *picture* instead of a mere diagram. Let him remember, also, that although many of his sitters may be disposed to use the words of Oliver Cromwell—" Paint me as I am, warts, and wrinkles, and all"—that no one will wish the warts to appear as wens, nor the wrinkles as seams and scars. Let him study the productions of the great masters in painting, both for position, drapery, disposition of light and shade, and colouring. A portrait secured under the best conditions of photography, guided by art, will be worthy of the best efforts of the colourist, and may, in his hands, fairly rival the finest miniature painting.

Study the
Great
Masters.

THE PRINCIPLES OF HARMONIOUS COLOURING.

WE have already shown that a photograph, perfect as regards its mechanical and chemical results, may be very imperfect as a work of art. It is scarcely necessary to add, that sufficient taste and judgment may be used in its production, in the arrangement of position, and the distribution of light and shade, to entitle it to the name of a *picture*; but it may still be very imperfect as a *portrait*. The effect of colour is in many cases absolutely necessary to anything like a faithful rendering of the original.

Necessity for
colour.

To produce good results in colouring, it is not simply necessary to possess the manipulatory skill to imitate with some success the colours of the original. A first requisite in the education of the painter is a knowledge of the value of his colours—of their relations and harmonies—and of their effects in combination and juxtaposition. As in music an utterly inexhaustible world of beauty and delight results from the varied combinations and sequence of seven

Source of
harmony.

different notes, so in painting a source of beauty, scarcely more limited, results from the combination and arrangement of three primary colours; and in painting as in music the beauty does not consist in any one colour any more than it does in any single note, but in the *relation it is made to bear to others*.

It is true that the province of the portrait painter is, perhaps, more limited in this respect than that of the painter of works of fancy and imagination, or even than that of the landscape painter; whilst the scope of the colourist of photographic pictures is most limited of all; still, without some knowledge of the principles of harmonious colouring, he can scarcely hope to even approximate to the best results. And whilst in portraiture in many points the painter is bound to reproduce, as nearly as possible, the colours inherent in his model, yet in the choice of colour for draperies, backgrounds, &c., more latitude is admissible; and here he will avail himself of such analogies or contrasts of colour as, whilst producing a harmonious whole, give value and effect to the colours of the complexion. To aid the colourist in this respect, we shall give a very brief compendium of the leading principles pertaining to this subject, confining ourselves to their bare statement with as little comment as possible.

Source of
colour.

The source of all colour is light, and a beam of

white light is divisible into three separate rays—blue, yellow, and red. These constitute the three *primary colours*, and by their combinations every possible hue is attainable. White light, when decomposed by passing through a prism, gives what is called the *solar spectrum*, which consists of the seven colours seen in the rainbow, arranged in the following order:—Violet, indigo, blue, green, yellow, orange, and red: and hence it was at one time supposed that each of these was an elemental colour. Subsequent observation has shown, however, that all but blue, yellow, and red were formed by these impinging upon or overlapping each other.

These colours in their varied combinations are called *hues*. These hues, when weakened by admixture with white, are called *tints*; and when deepened by admixture with black, are called *shades*. The various gradations of tints and shades of one colour form a *scale*.

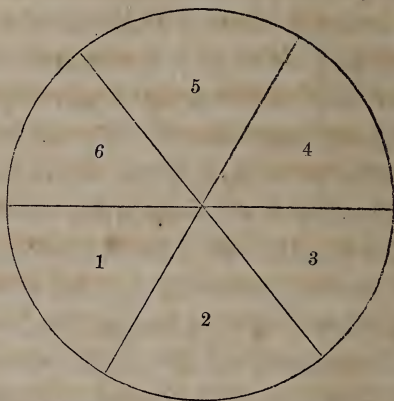
The presence in happy proportions of the three primary colours or their combinations, in a picture, produces *harmony*.

Any two primary colours, mixed in certain proportions, produce a *secondary* colour, which is *complementary* to the remaining primary colour: thus, the mixture of blue and yellow produces green, which is complementary to red. The mixture of yellow and red produces orange, which is comple-

Relations of
colours.

mentary to blue. The mixture of red and blue produces purple, which is complementary to yellow. This may be seen by trying the experiment suggested by the following diagram :

Illustrative
diagram.



Divide a circle into six equal parts, numbered 1, 2, 3, 4, 5, 6, like the diagram. Let the spaces 1, 2, 3 be coloured blue ; 3, 4, 5 yellow ; and 5, 6, 1 red. It will be seen that the space 1 is now coloured purple by the combination of red and blue, and that it is placed opposite to its complementary, the remaining primary, yellow. The space 3 is coloured green by the combination of blue and yellow, and is opposite its complementary, the remaining primary red. The space 5 is coloured orange by the mixture of yellow and red, and is opposite its complementary, blue.

Relations of
colours.

These combinations may be carried to an almost unlimited extent, with similar results. Thus, the combination of any two secondary colours will produce a tertiary, which is complementary to the remaining secondary. For instance, the mixture of orange and green produces citrine, which is complementary to purple; purple and green produce olive, which is complementary to orange; purple and orange produce russet, which is complementary to green, and so on.

This statement of the relations of colours is not arbitrary, nor the result of taste or fancy; but is based on absolute inherent principles. They exist as a physical necessity for the organs of vision, as may be ascertained by a few simple experiments. If, for instance, a red wafer be placed on a sheet of white paper, and the eye steadily fixed on it for a few minutes, and then removed to another part of the paper, a similar spot will appear before the eye, but of the complementary colour to red—green. This spot, called an *ocular spectrum*, will continue for a few moments until it is gradually displaced by the white light reflected from the paper. If the experiment be tried with a blue wafer, the colour of the resulting spectrum will be orange; if with a yellow wafer, a purple spectrum is the result, and so on with the others.

Illustrative
experiment.

This principle applies to every variety and com-

bination of tint ; if a red inclines a little to yellow, as in scarlet, then the complementary green will incline a little to blue, and become a bluish green. If, on the other hand, the red incline a little to blue, as in crimson, the complementary will incline a little to yellow, and become a yellowish green. These combinations may be so multiplied by gradations so delicate that it is impossible to enumerate them.

The nature of their relations may, however, be illustrated by the following diagram, in which the complementary of each colour will be found in the space directly opposite to it ; each pair yielding a harmonious balance of the three primary colours :



Each pair of colours, consisting of a primary and its complementary secondary, present, also, special contrasts peculiar to themselves. Thus blue is the coldest colour, and is also the most retiring; and orange, its complementary, is the warmest colour, and the most advancing. Every combination of colour as it approximates to orange or blue is warm or cold in its effect, and has the appearance of approaching the eye or receding from it in a picture.

Warm and cold, advancing and retiring colours.

Yellow is the brightest colour, and most allied to light; whilst its complementary, purple, is the darkest of colours. We may here remark, that white and black, which most completely contrast as light and darkness, are not regarded as colours: white, which is most like light, being supposed to represent a combination of all colours; and black, like darkness, an absence of both colour and light.

Light and dark colours

Red is the most positive and exciting of all colours, whilst its complementary, green, is the most soothing of all colours.

Exciting and soothing colours.

It will be observed, that whilst each combination of two primary colours produces a new and perfect hue, each subsequent combination tends to produce neutrality; the neutral tints formed partaking, however, more or less of the special characteristics of the primaries to which they are most allied.

Neutral tints—how formed.

Complementary colours in juxtaposition mutually

Effect of contrast.

enrich each other, and produce what is called the harmony of contrast. Thus, purple and yellow of equal purity and intensity become each brighter from contact with the other, the yellow becoming intensified by the extra yellow rays reflected by the purple, and the purple gaining an accession of richness from the purple rays given out by the yellow. From the same cause neutral tints placed in juxtaposition with full hues appear to be tinged with the complementary colour of such hues. Thus grey placed in juxtaposition with red will assume the appearance of greenish grey, green being the complementary of red.

Colours not
complemen-
tary injured
by proximity.

Colours not complementary to each other are mutually injured by contact. Thus, blue and purple placed together are both injured; the blue becoming greenish from the yellow rays emitted by the purple, and the purple assuming a russet tinge from the orange rays reflected by the blue. It will be seen from this that neutral tints placed in contact with full hues should incline to the complementary of such hues in order to produce the best effect. Thus, olive placed in contact with yellow should, to produce the best effect, incline to purple rather than to green, purple being the complementary of yellow.

Contrast of
intensity.

Beside the effect produced by contrast of hue, that resulting from contrast of intensity is to be

considered. If two tints of the same colour, but of different degrees of depth or intensity, are placed side by side, the deep tint will appear still deeper, whilst the light tint will appear still lighter, the difference in intensity appearing greatest at the points of contact. Contrasting colours, also, of different degrees of intensity, receive a double modification by contact; in brilliancy of hue as before described, and also in intensity, the deepest colour appearing still deeper, and the least intense appearing still more diluted. Hence all colours gain depth by contact with white, the white assuming the complementary tint of the colour near it. Black, on the contrary, has the effect of weakening the colours in its immediate neighbourhood. The effect of the several hues on black is varied in like manner, its depth being materially modified by contact with colours having a luminous complementary. Thus, black in juxtaposition with purple loses depth from being tinged with the yellow rays thrown out by the purple; in contact with blue or green it becomes rusty, from the orange or red rays reflected by these colours. Black is, on the other hand, intensified by contrast with orange, yellow, or red. The juxtaposition of grey, which is a mixture of white and black, gives brilliancy to all pure colours.

*Influence on
colours of
white and
black.*

Besides the harmony produced by judicious con-

*Harmony of
analogy.*

trast, there is the harmony of analogy, resulting from a combination of the various gradations of one colour in its own scale, or of the hues and broken tints in the order in which they occur in the solar spectrum. An infinity of pleasing results may be obtained by the judicious arrangement of analogous tints in harmonious relations; being less striking, however, it requires much nicer perceptions and more skilful management to produce happy effects.

Harmony
inherent in
Nature.

We have said before that the laws which regulate harmonious colouring are not dictated by fancy, but are based on inherent and absolute relations. We may here remark, that a very little observation of Nature will afford pleasing illustration of both kinds

Illustrations.

of harmony. A striking illustration of the harmony of analogy is seen in the beautifully blended and graduated colours of the rainbow; and again, in almost every landscape, where the blue of the distance blends with the cool greens and greys of the middle distance, and these merge into the warmer greens, yellows, and browns of the foreground; whilst if the sun be setting in the landscape, every object is beautified by the play of golden light and purple shadow. With instances of the harmony of contrast, Nature teems, in every garden, field, and moor, as the damask rose with its yellowish green leaf, the scarlet holly berry and its deep green

foliage, and the almost unvaried mingling of yellow gorse and purple heather.

In applying these principles to the colouring of <sup>M. Chevreul
an authority.</sup> portraits, it may be well to remember that M. Chevreul,* whose researches in the subject entitle him to the highest position as an authority, in treating of the harmony of colours as pertaining to the complexion, regards the *blonde* or fair complexion as always more or less allied to an orange ^{Blonde complexion.} tint throughout; "the colour of light hair," he says, "being essentially the result of a mixture of red, yellow, and brown, we must consider it as a very pale orange brown." By this, of course, we only understand that orange is the full hue to which *blonde* complexions most nearly approximate. In what is termed decidedly red hair, the orange is certainly decided enough, as also, although in a less degree, in auburn and chestnut hair, the approximation to orange growing less decided as the yellow or brown tint prevails. He adds: "The colour of the skin, although of a lower tone, is analogous to the hair, except in the red parts; further, blue eyes are really the only part of the fair type which form a contrast of colour with the ensemble, for the red

* To the student who would render himself thoroughly familiar with the subject, we recommend M. Chevreul's work on "The Simultaneous Contrasts of Colours," as also Mr. Redgrave's excellent little "Manual of Colour."

parts produce with the rest of the skin only a harmony of analogy of hue, or at most a contrast of hue, not of colours; and the parts of the skin contiguous to the hair, the eyebrows, and eyelashes, give rise to a harmony of analogy, either of scale or of hue. The harmonies of analogy, then, evidently predominate in the fair type over the harmonies of contrast." When hazel eyes exist in the fair type, as is not unfrequently the case in conjunction with chestnut hair, the harmony of analogy is complete. In the various complexions generally classified under the term *brunette*, in which black or dark hair prevails, we have, on the other hand, the harmony of contrast prevailing. "In fact," observes M. Chevreul, "the hair, eyebrows, and eyes contrast in tone and colour, not only with the white of the skin, but also with the red parts, which in this type are really redder, or less rosy, than in the blonde type; and we must not forget that a decided red associated with black, gives to the latter the character of an exceedingly deep colour, either blue or green."

Brunette
complexion.

Value of
these princi-
ples to the
colourist.

A proper understanding of the principles we have here briefly indicated will enable the colourist, whilst preserving fidelity to nature in the points absolutely inherent in the model, at the same time to so manage the draperies, background, &c., as to

give value to the complexion, and produce a perfect and harmonious picture.

The versification of maxims, of any kind, is such an aid to the memory, that it has been called the “shorthand of thought;” and we shall scarcely need to refer to the trite quotation from Fletcher of Saltoun, in which he declares that the verse of a country exercises a higher influence than its laws, to justify us in reprinting the following lines,* which aptly embody the principles to which we have devoted this brief chapter:—

The Relations and Harmonies of Colour.

Blue—Yellow—Red—pure simple colours all
 (By mixture unobtained) we PRIMARIES call;
 From these in various combinations blent,
 All other colours trace their one descent.
 Each mixed with each—their powers combin'd diffuse
 New colours—forming SECONDARY hues:
 Yellow with red makes *Orange*, with blue—*Green*,
 In blue, with red admix'd, is *Purple* seen.

* The lines are by Henry Hopley White, Esq., to whose courtesy we are indebted for permission to publish them. They were written to accompany the beautiful diagram illustrating the relations of colours, which, by Mr. White's permission, appeared as frontispiece to the first edition of this work. The lines and coloured diagram are now published on a separate sheet, by Mr. Newman, Soho Square, and will be found valuable for use in schools, and by all students of colour.

Each of these hues, in *Harmony* we find,
 When with its complementary combined ;
 Orange with blue, and green with red, agrees,
 And purple tints, near yellows, always please.
 These secondaries TERTIARIES produce,
 And *Citrine—Olive—Russet* introduce ;
 Thus green with orange blended forms citrine,
 And olive comes from purple mixed with green ;
 Orange, with purple mix'd, will russet prove ;
 And, being subject to the rule above,
 Harmonious with each tertiary we view
 The complemental secondary hue :
 Thus citrine—olive—russet harmonise
 With purple—orange—green, their true allies.
 These hues, by white diluted, *Tints* are made,
 By black, are deepen'd into darkest *Shade*.
 Pure or combin'd, the primaries all three,
 To satisfy the eye, must present be ;
 If the support is wanting but of one,
 In that proportion harmony is gone :
 Should red be unsupported by due share
 Of blue and yellow *pure*—combin'd they are
 In green—which secondary, thus we see,
 The harmonising medium of all three.
 Yellow for light *contrasts* dark purple's hue,
 Its complemental, form'd of red and blue.
 Red most *exciting* is—let Nature tell
 How grateful is, and *soothing*, green's soft spell.
 So blue *retires*—beyond all colours *cold*,
 While orange *warm*—*advancing* you behold.
 The union of *two* primaries forms a hue,
 As perfect and decided as 'tis new ;
 But all the mixtures which all *three* befall
 Tend to destroy and neutralise them all ;
 Nay, mix them—three parts yellow—five of red—
 And eight of blue—then colours all are fled.
 When primaries are not *pure*—you'll surely see,

Their complementals *change* in due degree ;
If red (with yellow) to a scarlet tend,
Some blue its complemental green will blend ;
So if your red be crimson (blue with red),
Your green with yellow would be varied ;
If yellow tends to orange, then you find
Purple (its complement) to blue inclin'd ;
But if to blue it leans, then mark the change,
Nearer to red you see the purple range.
If blue partakes of red—the orange then
To yellow tends ; if yellowish—you ken
The secondary orange glows with red.
Reader, farewell ! my lesson now is said.

WATER COLOURS.

THE colours required for colouring photographs are the same as are used for miniature painting, with such difference in their combinations as the tone of the photograph renders necessary. The following list comprises all that is necessary, and if used perfectly pure, will not injure the photograph.

Antwerp Blue.	Chinese White.
Bistre.	Chrome Yellow, 1, 2, 3.
Black Lead.	Cobalt Blue.
Blue Black.	Cologne Earth.
Bright Roman Ochre.	Constant White.
British Ink.	Crimson Lake.
Bronze.	Dragon's Blood.
Brown Madder.	Emerald Green.
Brown Pink.	French Blue.
Burnt Carmine.	Gallstone.
Burnt Sienna.	Gamboge.
Burnt Umber.	Green Bice.
Cadmium Yellow.	Green Oxide of Chromium.
Carmine.	
Chalon's Brown.	Hooker's Green, 1, 2.
Chinese Vermilion.	Indian Lake.

Indian Red.	Prussian Blue.
Indian Yellow.	Prussian Green.
Indigo.	Purple.
Intense Blue.	Purple Brown.
Intense Brown.	Purple Lake.
Italian Pink.	Purple Madder.
Ivory Black.	Raw Sienna.
King's Yellow.	Raw Umber.
Lamp Black.	Red Chalk.
Lemon Yellow.	Red Orpiment.
Light Red.	Rose Madder.
Madder Carmine.	Roman Ochre.
Malachite Green.	Sap Green.
Mars Brown.	Scarlet Lake.
Mars Orange.	Sepia.
Mars Red.	Sepia, Page's.
Mars Violet.	Sepia, Roman.
Mars Yellow.	Sepia, Warm.
Naples Yellow.	Smalt.
Neutral Tint.	Terra-verte.
Olive Green.	Ultramarine.
Orange Ochre.	Ultramarine Ashes.
Orange Vermilion, 2. (for Scarlet.)	Vandyke Brown.
Payne's Grey.	Venetian Red.
Permanent Crimson.	Verditer.
Pink Madder.	Vermilion.
	Yellow Lake.
	Yellow Ochre.

Colours and
their quali-
ties.

CARMINE.—This is a brilliant red, inclining to crimson, very clear in its pale washes, and intense in its full touches. Being somewhat fugitive, it requires using with caution in flesh tints.

BURNT CARMINE is a rich deep crimson, very useful in the deepest touches of drapery.

ROSE MADDER.—A most valuable colour for flesh; its pale washes are delicate, clear, and transparent, and very permanent.

PINK MADDER.—Similar, but a little deeper in tint.

CRIMSON LAKE.—Somewhat similar to carmine, but not so brilliant; chiefly useful in draperies.

VENETIAN RED.—A beautiful colour for flesh; works well, and is permanent. Its pale washes are very clear, and, slightly modified with Indian yellow, it forms, in the hands of the miniature painter, a valuable general tint for most complexions, but for photographs is often too deep.

LIGHT RED is similar in general character, but more inclining to orange.

INDIAN RED.—A powerful red of a purplish hue, works well, and is durable; useful alone and in combinations as a shadow for flesh.

VERMILION.—A very brilliant red, not generally

suitable for flesh tints, as it is heavy and does not wash well. With a little Lake it is useful for the lower lips of children.

ORANGE VERMILION, No. 2. — Works better than the preceding, and, as its name imports, has a slight inclination to yellow. (This colour of Newman's is the nearest approach to pure scarlet that is permanent.)

ROMAN OCHRE.—Useful for dark flesh, as well as for draperies. It is also used in combination with Sepia for light hair.

YELLOW OCHRE.—Used in combination for light hair, and also in landscape backgrounds.

INDIAN YELLOW.—A brilliant and intense yellow, which works well. From its purity of tint it is a most useful yellow for mixing in flesh tints. For many photographs, however, it is too intense.

CADMIUM YELLOW.—A very brilliant and permanent yellow for draperies. Useful in forming orange tints.

GAMBOGE.—A fine rich yellow, useful in forming green combinations; washes well, but is not suitable for flesh.

LEMON YELLOW.—A beautiful light, vivid, and permanent yellow, useful in draperies for high lights.

YELLOW LAKE.—A bright transparent yellow, but somewhat fugitive.

ITALIAN PINK.—A very similar yellow to the preceding, but deeper and richer.

NAPLES YELLOW.—A fine light yellow, valuable when mixed with Pink Madder as a general wash for flesh; and alone, where a body colour is required for the high light. Like most mineral colours, it is injured by impure air, from which the picture should always be carefully protected.

RAW SIENNA.—A brownish yellow, permanent, and works well. Useful in backgrounds.

BURNT SIENNA.—A fine transparent brown of an orange tint, useful in warm dark complexions, and in backgrounds.

BROWN MADDER.—A rich russet brown, permanent, and works well; useful for the darkest touches in flesh, and for lowering red draperies. Combined with blue it makes a delicate grey, useful in flesh shadows.

BURNT UMBER.—A good brown, useful for hair, draperies, and backgrounds.

SEPIA.—A cool transparent brown; useful alike in its pale washes and full touches. Useful for hair, either alone or in combination. With lake, or lake and indigo, it forms a fine transparent black for the shadows of draperies of either silken or woollen texture.

WARM SEPIA.—Similar in all its characteristics, but of warmer tint.

VANDYKE BROWN.—A fine warm brown. From its great transparency it is useful in glazing many other tints, which it deepens and warms. Care is required in using it, as it is apt to work up when a great body is used.

NEUTRAL TINT.—A useful grey, which may be modified for almost any shadow by the addition of other tints.

PURPLE MADDER.—A deep warm purple of great richness and intensity ; works well and is permanent. Useful for very deep warm shadows.

FRENCH BLUE, OR FRENCH ULTRAMARINE.—A fine blue, very nearly resembling the tint of real ultramarine, whilst it works better.

COBALT.—A bright permanent blue, which enters largely into the shadow colours of flesh.

PRUSSIAN BLUE.—A deep blue, useful in draperies, and forming with carmine all varieties of purple and violet. It should not be used in flesh, as it is apt to turn green.

INDIGO.—A good dark blue, useful in combination for forming a variety of greens for backgrounds.

IVORY BLACK.—A rich transparent black, a little inclining to brown in its washes.

CHINESE WHITE.—A valuable permanent white of much body, and working well. Useful for the light of eyes, lace, &c. ; also for giving body in draperies.

BRUSHES, &c.

Pencils—to
choose.

The pencils should be sables of moderate size. When charged with water they should terminate in a good point with no uneven hairs, and should spring well when pressed with the finger. For large washes a few good camel's hair pencils will be necessary. For hatching, a sable, the point of which has been worn off, may be used. Small pencils should be avoided as tending to give a feeble, wiry effect, very undesirable. Good pencils are indispensable to comfort in working, as well as to the production of perfect result.

THE PHOTOGRAPH: TO CHOOSE AND PREPARE IT.

To choose
the photo-
graph.

To obtain good results in colouring, it is necessary that the photograph approximate in some degree to excellence. It is important that the distribution of light and shade in the picture be effective and natural, that it be sharp and in focus throughout, and that it be a clear, bright, well-defined photograph.

A direct vertical light for the production of the portrait should be avoided, as the effect of light and shadow so produced is generally unnatural; the intense light at the top of the head often giving to dark glossy hair the appearance of greyness, whilst the shadows under the eyes, nose, and chin are unpleasantly heavy. A portion of skylight, joining a side light, both facing the north, will give the best picture. The sitter should be placed back a little from under the skylight, the head a little quartering from the side light. The whole figure will be then well illuminated; the deepest shadow on the face (we are now speaking of a three-quarter view, which, generally speaking, is best) will be on the retiring cheek; whilst the partial profile will be well lighted and clearly defined on the shadowed cheek. The position of the body in relation to the head is a matter of taste. When the head and body are both placed in one direction, the effect is most simple; whilst the body turned in one direction, and the head in another, gives more animation to the figure. Care must be taken, however, not to give too much action to the figure, or to give it a strained, unnatural posture.

Management
of light.

Position of
the sitter.

The background should be of a tint somewhere midway between the highest lights and the deepest shadows of the picture, in order to give due relief to all parts, and produce the best results in colour-

Background.

ing. If the sitter be placed a few feet from the screen used for a background, the figure will possess greater relief. Care should be taken to give sufficient space for background above and around the figure. Nothing looks clumsier than a picture with scarcely any background, as though the sitter were pinched for space. The position of the figure on the background is the only means of suggesting the size and proportions of the model. A figure placed high on the plate suggests a tall person, and the figure low down in the picture a short one. It is well to avoid crowding the background with useless objects, as columns, curtains, vases, &c. These, if necessary, can be painted in with better effect than if taken by the camera. A background should, however, be devoted to repose, in order to give effect to the principal figure or object.

The photograph should be, as we have said, clear, well defined, perfect, brilliant, and not too dark, and free from stains and spots. If the picture be too dark, it will be impossible to produce a clean, delicate effect in colouring.

Tone of the
photograph.

For water colours, the tone of the picture is of considerable importance. A warm neutral tint or grey is the best tone for colouring. Heavy shadows of purple brown, or of an inky tone, are very undesirable, from the want of harmony between these tones and the natural shadows of flesh. For

fair complexions a light impression is more necessary than for a dark person, but too deep an impression is in no case suitable. At the same time it must be remembered, that if the impression is so light that the half tones are wanting, it will be difficult to restore them in colouring.

The first step in preparing the photograph is to mount it on card-board. For this purpose, a solution of gelatine or clean fresh glue should be used; paste or gum-water should be avoided, as it is apt to generate acid which would injure the photograph. The gelatine or glue should be brushed over the back of the photograph, which should then be laid on the board. The card-board may also be moistened, to prevent the warping; but this is not necessary if the gelatinised photograph is placed on the board at the fit moment. A sheet of clean paper should now be laid on the surface, and then pressed firmly and gently down; the picture should then be put under a weight.

Mode of
mounting.

This done, its further preparation will depend somewhat on the process by which it was produced. As the various photographic papers, and the different processes to which they are subjected by photographers, yield almost every variety of surface, it is impossible to lay down any universal mode of procedure in preparing the surface to receive water-colours. We may, however, describe the surface required.

Preparation
of the sur-
face.

Preparation
of photo-
graph.

Many photographers, in fixing and washing their prints on salted paper, wash them in boiling water, and thus entirely discharge the size from the paper, whilst others do this in a partial degree. The effect of this is, that water colours applied to the unsized surface are at once absorbed, rendering it impossible to work with them. To apply water colours to paper with any facility and effect, it is necessary that it possess a surface on which the colours wash easily, sinking in just sufficiently to allow other colours to be worked over them without washing up. To obtain this surface, the photograph will invariably require some preparation. Some colourists have recommended the use of parchment size, with the addition of a little alum. In a matter of such importance, however, and which so materially affects comfort and success in working, we recommend the colourist to obtain "Newman's Preparation" for the purpose, which, applied to the photograph, gives a fine surface, on which the colours wash easily, and enables the amateur to produce the most brilliant results.

The preparation must be applied with a camel's hair brush, and spread evenly and carefully all over the surface of the photograph, which must be then suffered to dry. In most cases one application will be sufficient, which may be ascertained by trying a corner with a little colour. If it wash

on easily without sinking into the surface too much, it is ready for colouring. If, on the other hand, it is much absorbed, it will, especially if the colourist be a tyro, require another application. Before commencing to colour, it will be as well gently to wash the surface with a brush and a little clean water, and then dry it.

Some albumenised paper will not require any preparation, but for the most part it will be improved by a single application. Where the colours work greasily on albumenised paper, a little prepared ox gall may be used with them.

Besides its use for preparing the surface to receive the colour kindly, this "Preparation" will be found invaluable as a medium for adding to the water colours in use. It will mix readily with water in any proportion for this purpose, but has the valuable property of becoming insoluble when dry, so that a wash of colour with which it has been mixed is in no danger whatever of working up in applying another wash over it. The colourist is thus enabled to obtain a depth and transparency resembling the effect of oil colours, and altogether unattainable by mixing the colours themselves on the palette.

In using it, a small portion of colour only should be mixed at one time, not more than is required for immediate use, as when the colour mixed with it has once dried on the palette, it is not available

for further use. The palette and pencils should be washed also before the colour hardens, or it will be troublesome to remove.

Numerous preparations and sizes have been proposed for applying to the photograph prior to colouring, but when tried have been found wanting. Of this "preparation" we can, however, speak with unhesitating confidence, as equally valuable for applying to the photograph to be coloured in oil or water, or as a medium for use with the latter.

Preparation
for dry
colours.

The "preparation" may often be used with advantage both to salted and albumenised paper to which dry colours are to be applied, if it be found they do not "bite," or adhere sufficiently.

METHOD OF COLOURING.

Principles of
miniature
painting.

Although the colouring of photographs differs in some essential particulars from miniature painting, yet as both the manipulation and the management of the colours are similar, it is necessary at the outset for the amateur to know something of the principles on which painting in water-colours is based.

Effect of
"washing"
on the
colour.

The photographer entirely unacquainted with these principles will probably be surprised to ascertain that, by mixing his colours to the desired tint, and then simply washing them on to his photograph, he will produce but a woefully meagre and

unsatisfactory result. The effect would be little better than a flat insipid imitation of the multitude of coloured prints which abound in the windows of stationers' shops about the 14th of February. There is, however, scarcely any part of a human face so flat as to be correctly represented by a simple wash. It is so full of undulations that the gradations of light and shade are almost innumerable, and these gradations between the high lights and deepest shadows are known as "pearly tints," "demi-tints," or greys. In using these, and indeed all gradations of colour, upon the local flesh-tint, in order to obtain transparency and depth, it is necessary to have recourse to "hatching," or "stippling." Hatching Hatching. consists in working on the colour in short strokes, following as nearly as possible the form of the features; that is, the strokes somewhat horizontal on the forehead and circular about the eyes, mouth, and general contour. These strokes are then crossed with similar ones, avoiding, however, the formation of direct right angles. This should be done with a firm touch, making each little stroke as even as possible. Stippling is a somewhat similar Stippling. process, only fine dots with the point of the brush are used instead of lines. The effect in both cases is to give depth and transparency, and at the same time retain greater purity of tint than could possibly be effected by any washing of mixed colours.

Advantage of
copying
miniatures.

The amateur would do well at the outset to procure if possible a few well-painted miniatures, of which he should then obtain photographic copies. These he should proceed to colour, carefully copying the various tints of the originals. He will by this means obtain a knowledge of the various colours used in producing the desired effect in the original, and of the modifications of these colours rendered necessary by the tone of his photograph.

Tone of
photograph.

One of the greatest difficulties the beginner will meet with is this want of harmony in many cases between the tone of the photograph and shadow tints required in the coloured picture; and as both perpetually vary, no rule can be given for avoiding the difficulty. We can only reiterate as a general rule, that warm grey-toned photographs are best for colouring; that for fair persons—especially for ladies and children—a light impression, free from heavy, abrupt shadows, but perfect in definition and half-tone throughout, is best; for dark persons, especially strongly-marked men's heads, a more vigorous impression may be used with advantage.

Method of
working.

The novice should study to acquire a firm, free touch with the pencil; having a distinct conception of the object of each stroke, endeavour to effect that object by one bold touch rather than by several hesitating attempts. Remember that in water colours the first tints must be kept pure and bril-

liant, as they may be easily lowered afterwards to any required tone; but once rendered dull or muddy looking, nothing can restore their purity.

At the risk of some repetition, we will add to these preliminary remarks a score of maxims, which apply equally to every mode of colouring, whether in oil, water, or dry colours. The colourist will do well to store them carefully in his memory, and have them at all times ready for application:—

- I. Flesh as it retires from the eye appears to grow colder in tone. Maxims in colouring.
- II. The edges of all cast shadows are grey.
- III. The high lights of flesh should be of a yellowish-white.
- IV. A judicious subordination of the half-lights to those which are more prominent ensures brilliancy.
- V. As light is colour, every gradation to shadow is a gradation from colour; and the colour in shadows, therefore, should never be too bright.
- VI. Local colours are not found either in lights or shadows.
- VII. Cold colours, or those approximating to blue, retire.
- VIII. Warm colours, or those approximating to orange, advance.

- IX. Contrasts give brilliancy of effect; but they should never be violent or inharmonious.
- X. The style of execution should vary with the subject, to aid in expressing character;—vigorous and bold in a man, delicate and tender in a woman.
- XI. Colours should be laid with as little rubbing with the brush as possible, to keep them fresh and bright.
- XII. Avoid harshness. Let every line be softened; for in nature there are no real outlines, although the boundary of sight is distinctly marked.
- XIII. Keep all cast shadows of one tone, and always warm (except at the edges), varying of course with the local tint.
- XIV. Keep reflected lights warm, unless the object from which they are derived is visible; in that case, they partake of its especial colour.
- XV. Where the outline of a figure is ungraceful, it may judiciously be lost to some extent in the shadow of the background.
- XVI. Massing lights and shadows together will ensure breadth and grandeur of effect. A skilfully-managed background will greatly aid in this respect.

- XVII. Carefully preserve transparency in the shadows.
- XVIII. Colours should be kept pure and transparent; truthful to the subject, and harmonious both with each other and the nature of the picture.
- XIX. Every part of the background should appear to retire from the figure, which should never seem to be cut in or inlaid.
- XX. The most careful manipulation and elaborate finish will be tame and ineffective without a perpetual attention to the proper preservation of breadth of light and shade.

A constant reference to the duplicate photograph will enable the colourist to preserve the *likeness* in his picture; and constant attention to these maxims will enable him to give it some value as a work of art.

Reference to the duplicate.

TO PAINT THE HEAD.

The photograph being prepared, ascertain that it is in a condition to receive the colour by trying one corner. If the colour be absorbed too much, another sizing will be desirable; but whilst a slight absorption of the colour renders more care necessary, it has the advantage of enabling the artist to

To try if the photograph will receive colour.

gain depth and transparency by working over his previous painting without disturbing the colour.

Position for
working.

The photograph should be placed on a small desk, the light falling on it from the left hand. A piece of clean paper should be kept over the lower part, on which to rest the hand whilst painting the head, otherwise it will get greased with the hand, and receive the colour with difficulty. A duplicate copy, well and strongly defined, should always be immediately at hand for constant reference.

Setting the
palette.

In setting the palette for flesh, the miniature-painter generally uses for the local colour a wash of Venetian red and Indian yellow. This is not, however, found most suitable for the same purpose in colouring photographs; the slightly yellow hue of the lights of most photographs rendering this combination too intense. Naples yellow* with a little madder pink, will be found more useful for the general wash, the slight opacity of Naples yellow having a good effect in softening the harshness of the shadows too common in many photographs. It

* Some artists object to the use of Naples yellow in flesh, from the fact that it is injured by exposure to impure air. The photograph itself, however, is injured by impure air, and it is always expected that the finished picture will be carefully sealed from all contact with the atmosphere, so that this objection possesses little weight. Lemon yellow has been suggested as a substitute, but it is of a tint altogether unsuitable for flesh.

is necessary here to remark, that there are two tints of Naples yellow sold, one of a greenish tone, and the other more cream-coloured; it is the latter we are now recommending.

Commence by giving the retiring shadows of the forehead, eyes, and mouth, a wash of grey, composed of Naples yellow and cobalt, the green or blue tint prevailing, as the complexion is dark or fair. Now give a general wash of Naples yellow with a little pink madder, keeping the colour pure and brilliant, and not too deep in tint. Whilst this is drying the hair may be coloured, the tone of the photograph, of course, materially modifying the selection of tints to be used, a list of which will be found in another place. In some heavy photographs, it will be necessary to use a little body colour for the high lights. The eyebrows and eyelashes may now be touched and the pupil put in with sepia, and the iris with cobalt and sepia if a grey or blue eye, or for a dark eye with burnt sienna. The lips are now to be coloured with vermilion and pink madder, remembering to keep the upper lip in shadow. The lips of children require more vermilion, and of aged persons more pink madder, sometimes even approximating to a purple hue. The shadows about the mouth and nostrils may now be touched with brown madder and pink madder. The principal shadows of the face may next be

Commencing
to colour.

Colouring
the hair.

The eyes.

The lips.

Shadows of
the face.

strengthened with a mixture of Indian red, cobalt, pink madder, and Indian yellow, or cobalt and Naples yellow, the tone of the photograph and the complexion of the model indicating which of these colours shall prevail. Now heighten the general flesh tint by hatching, using the colour thin and flowing, and following the form of the face. In dark complexions the carnations may be heightened with Indian red.*

The cheek.

If high finish be not desired, the head might now be completed by heightening the colour on the cheek with vermilion and pink madder.

Tinting.

Good photographs, thus finished, and styled

“ TINTED,”

have a very pleasing effect if skilfully managed. In many cases, however, a more completely elaborated painting will be required. In which case, next proceed to wash in the general tint of the background, choosing a colour that will give the most value to the complexion. The draperies may now, also, be commenced, by receiving the general wash.

Strengthen-
ing flesh
tints.

This will have materially modified the depth of the flesh tints, which must be strengthened accordingly. The colour of the cheek is now to be heightened with vermilion and pink madder. Car-

* This colour, being a preparation of iron, should not be used with Naples yellow, which it is apt to injure.

mine is sometimes used for the cheeks of children and ladies, with pleasing effect. In colouring the cheek, bring the colour well up to the temple and diffuse it towards the ear, stippling the edges near the nose; add also a little of the same tint to the chin. Deepen the extreme shadows again if necessary, and blend the shadows with the local flesh, by stippling with grey. Hatch over the shadows of the forehead—which have been deepened previously with Indian red—with a bluish grey, and with a light tint of the same hatch over the retiring cheek, the temples, and about the chin. Put in the blue shadows beneath and at the corners of the mouth. Now stipple the socket of the eye with a cool green. The reflected lights may next be warmed by stippling with the flesh tint. Finish the lips by stippling with vermilion and pink madder, using a little Chinese white for the high light, if necessary. Touch the edge of the upper eyelid with Indian red, and soften the shaded side of the iris, by the addition of a little shadow colour. The *sclerotic* or white of the eye in many persons will require touching slightly with cobalt, and the corner next the nose with pink madder.

Deepening
the shadows.

The hair may now be finished, taking care to keep it in mass, avoiding the wiry effect of single hairs. Soften the outline of the head where it meets the background, to avoid the effect of in-

Finishing the
hair.

laying. Work on the edges of the hair and flesh with grey, to prevent the hair appearing cut into the face.

Finishing
touches.

The head will now be considerably advanced, and the chief work will be to give finish and softness by stippling in the greys and pearly tints, and to give a spirit and character by putting in the deepest "touches" about the eye with sepia and pink madder, mixed with a little dilute gum arabic, and about the mouth and nose with sepia and gum water. The light in the pupil of the eye must be carefully put in with Chinese white, the preferable form of which is that in bottle.

The neck and
hands.

The neck and bosom, hands and arms, which have previously been washed with the local tint, may now be finished. The shadows of the neck are cooler than those of the face, as are also those of the bosom, which are of a bluish tint. The tips of the fingers, knuckles, and elbows, may be hatched with pink madder, and the divisions of the fingers touched with the same.

Draperies
and back-
ground.

Next proceed to finish the draperies and background (of the method of painting these we shall speak in another place). In the choice of colours for this purpose, the complexion of the model must be considered. If it incline to yellow, it may be neutralized by the proximity of a brilliant yellow ribbon, whilst purple would ruin it. A very red or

purple face may be softened by the neighbourhood of more vivid colours of the same hue. A bright, rosy complexion will be improved by draperies of green, and a very fair complexion may gain by contact with blue.

Now return to the face and examine it carefully, Corrections and alterations. in order to give it the finishing touches. Begin at the upper part of the picture and complete it as you proceed. Where the shadows have too much purple, correct with cobalt and a little yellow; if too green, correct with Naples yellow and pink madder. Touch the eyelids with sepia. See that all the edges of shadows are softened into flesh with grey. Keep all retiring parts cool. The shadows of the ear should be warm, and general tint somewhat pinkish. The shadow under the nose may be glazed with Vandyke brown. If the hatching be too wiry, work on it with a wet pencil without colour, to blend and soften the lines.

The high lights in the photograph should be High lights. throughout carefully preserved. Where it is necessary they may be put in with a little Chinese white and Naples yellow, passing over them when dry a delicate coat of the local tint, to blend them with the flesh.

A little gum water used in the deepest shadows of the hair, eyes, &c., gives transparency if required, and the picture is finished.

COLOUR OF HAIR.

General hints
on hair.

The various colours of hair are so numerous, and the tones of photographs so varied, as to render it impossible to give any specific combinations of colour for painting hair. We may, however, offer a few general hints. In such heavy photographs as may require it, a little body colour may be used. Chinese white or Naples yellow added to the colour for lights will answer.

FLAXEN HAIR.—The lights may be formed with Roman ochre, the shadows have often a greenish hue.

AUBURN AND CHESTNUT HAIR.—The lights of neutral tint inclining to purple, the local colour burnt umber, the shadows glazed with lake.

BRIGHT RED HAIR.—As it is rarely an object of ambition to possess hair of this colour, it should be generally somewhat subdued. For the lights Roman ochre may be used; Venetian red and sepia, or burnt sienna, for the local colour. Shadow with sepia and lake.

DARK BROWN HAIR.—Lights, purple; local colour, sepia; shadows warm.

RAVEN BLACK HAIR.—Lights, neutral tint; local colour, indigo, lake, and gamboge, in such proportions as may be required.

GREY HAIR.—Cobalt and sepia, modified as may be required with neutral tint and burnt umber.

DRAPERIES.

We have before remarked that in portrait painting, whilst there are certain colours inherent in the model which the artist must render accurately by colouring them as faithfully as possible, there are others the management of which are very much under his own control, and by the judicious choice and arrangement of which he gives their utmost value to the colours absolutely belonging to the sitter, and preserves the harmony and keeping of his picture. ^{Preservation of harmony.} The management of the draperies comes under this head. We cannot here elaborate the subject, but must leave it to the good taste of the colourist, merely referring him to the brief statement of the principles on which the harmony of colour is based, given in a former chapter.

In a good photograph the characteristic texture, ^{Transparent colours for silks, &c.} folds, lights, and shadows of different fabrics are generally rendered with great accuracy and beauty; and in silks and satins the artist will have little difficulty in colouring; clear washes of transparent colour generally suffice, a little Chinese white being sometimes added to the high lights, to give additional brilliancy. As a general rule, where the lights are cool the shadows should be warm.

BLUE, often a favourite colour with ladies, is ^{Blue dresses undesirable.} somewhat troublesome for the artist to deal with,

as the presence of such a mass of cold and positive colour renders it necessary to introduce something sufficiently warm to preserve the harmony of the picture. Where it must be painted, use cobalt for the lights, and French blue and lake for the shadows; and in some cases a little sepia may be added, keeping the shadows as warm as possible. For dark blue, indigo or prussian blue, still keeping the shadows warm, and if the blue approximate to purple the shadows may have a tinge of orange.

All positive
colours to be
avoided.

YELLOW.—All positive colours should be avoided in any mass, or at least used with moderated brilliancy. If Indian yellow be used for lights, the shadows should be of Vandyke brown, and a little purple madder. Gamboge may be shadowed with sepia. Cadmium yellow, which is of a rich permanent orange tint, may be shadowed with burnt sienna and lake.

Scarlet
uniforms.

RED.—Whether vermilion, carmine, or lake be used, sepia and lake in modified combinations will form a good shadow colour. Pink, which is either carmine or pink madder diluted, may be shadowed with carmine, cobalt, and sepia mixed to a lilac tint. For uniforms a most brilliant scarlet is produced by first washing with cadmium yellow, and when that is dry using vermilion over it. Shadow with carmine and sepia.

Compound
tints.

PURPLES, GREENS, ORANGE, and all compound

tints are formed by mixture of some of the primaries. A little practice will enable the colourist to select such as best meet the wants of the moment, following the principles already indicated regarding their shadows.

WHITE.—Chinese white is the most useful and permanent. The middle tints may be formed of cobalt and Indian red, and the shadows of sepia. Chinese white is used for lace, pearls, &c.

BLACK.—Sepia, indigo, and lake; or gamboge, indigo, and lake, make a good transparent black for silks, &c., using more indigo for the lights and more lake for the shadows.

GOLD ORNAMENTS may be touched with Roman Ornaments. ochre; the lights with Chinese white and chrome or Naples yellow, and the shadows with burnt umber.

CLOTH FABRICS.—These, unlike silks, are often painted in opaque colours, and it is then best to cover up to some extent the photograph at once with the local colour, and paint the lights and shadows on it; or, if they are strengthened first, they will show sufficiently through the local colour to guide the artist as to the drawing. For a black coat, mix Chinese white and lamp or ivory black to the proper tint for the local colour, adding a little gum water. Lay on as evenly and smoothly as possible a full coat of this; when dry, wash with thin gum water carefully. When this is dry, any little

Body colour,
to prepare
and lay on.

inequalities are to be taken off with a scraper, and the surface again lightly coated with gum water. This process may be repeated if necessary, until an even smooth foundation is obtained. Now paint in the lights and shadows carefully, observing the drawing in the duplicate photograph. The shadows will be formed with indigo, sepia, and lake, mixed with gum water, and the lights of the same without the gum, with the addition of sufficient Chinese white. Care must be taken in painting these not to disturb the general wash. Cloth fabrics of other colours require similar treatment, Chinese white forming the body colour, with the addition of such other tint as may be required.

Where cloth draperies in the photograph are perfect and well defined, it is not necessary to use body colour in obtaining texture. In such cases, transparent washes preserving the characteristic texture, as rendered in the photograph, will answer every purpose. The lights and shadows will then be strengthened in the same manner as if body colours were used. This method is best where it is desired to preserve the general photographic character of the picture.

Gum water. The deep shadows of all draperies are improved by the addition of a little gum water; but this should be used very sparingly, as excess is likely to crack, and gives a vulgar effect.

BACKGROUNDS.

The background is generally still more under the control of the colourist than the draperies, and by it he is enabled, not only to give relief to the figure, but to harmonise the whole. It should be devoted to repose, and in no case should be so painted as to distract attention from the principal figure. If painted of one uniform flat tint, the figure is apt to appear inlaid, which should by all means be avoided. The aim should be, to give an atmosphere to the picture. This must be effected by using broken tints, and by causing the light to fall on the background from the same point as it falls on the sitter. As a general rule, a judiciously-painted plain background has the best effect. The fewer objects introduced into a background, the better; and where introduced they should be merely indicated, not painted with sharpness or intensity. If a landscape background be introduced, it should be painted broadly, and with few details. With a large portion of the public these backgrounds are preferred, and they sometimes serve the colourist's purpose in admitting the repetition of the flesh colour in the warm tints near the horizon.

Repose
necessary.

Inlaid effect
to be
avoided, and
atmosphere
sought.

Landscape
background.

As a general rule, the best background is one which is darker than the lights, and lighter than the shadows, of the picture. For fair persons the blues,

General tint.

violets, and greens may be used with advantage, whilst for dark persons warm browns and dark reds will be found valuable. Greys, greens, olive, greenish greys, &c., will frequently be useful.

Mode of
working.

The local tint should be washed, and the lights and shadows of the background hatched on, using a little gum water with the colour. If a curtain be required, it should be painted with opaque colour; a sky, with transparent colour.

Opaque
background
inartistic.

Opaque "flat" backgrounds are often painted in photographs simply because they are easy to manage, and readily hide any defect in the photograph. Almost any tint may be made with Chinese white, and the addition of such other colour as may be required. A stone colour may be formed by mixing Chinese white with yellow ochre and burnt umber; a chocolate, of Chinese white and lamp black and Indian red; a greenish grey, of Chinese white, yellow ochre, and indigo. Opaque backgrounds are generally inartistic, however, and make the figure appear inlaid.

Mode of
painting
them.

Spots, to
touch.

When white spots occur in the background from some defect in the photograph, they must be touched with a little deeper tint of the local colour, which is generally lamp black or sepia. Black spots ought never to occur, for the transparent spots in the negative which cause them ought to be "touched out" in the first instance with opaque colour.

"Touching
out" the
negative.

VIGNETTE PHOTOGRAPHS.

A pleasing style of photograph has been much produced of late under this name. They do not require the same amount of finish as others, but look exceedingly well when *tinted* as described in a previous page.

STEREOSCOPIC PICTURES.

Photographs intended for the stereoscope should be simply tinted with transparent colours, as any attempt to produce finish by elaborate manipulation would not only fail of its purpose, but would, by altering or obscuring the minute photographic detail, materially interfere with the stereoscopic result. The following list comprises a selection of colours, the transparency of which may be sufficiently relied on, to meet all general requirements :

Burnt Carmine.	Intense Brown.
Carmine.	Indian Lake.
Cadmium Yellow.	Orange Vermilion, 2. (for scarlet.)
Gallstone.	Pink Madder.
Madder Carmine.	Rose Madder.
Purple Madder.	Cobalt Blue.
Permanent Crimson.	Brown Madder.
French Blue.	Chalon's Brown.
Intense Blue.	Crimson Lake.

Indian Yellow.	Light Red.
Purple Lake.	Neutral Tint.
Sepia.	Olive Green.
Sepia, Warm.	Prussian Blue.
Antwerp Blue.	Prussian Green.
Bistre.	Purple.
Brown Pink.	Payne's Grey.
Burnt Sienna.	Raw Sienna.
Burnt Umber.	Raw Umber.
Dragon's Blood.	Sap Green.
Gamboge.	Venetian Red.
Hooker's Green, 1, 2.	Verdigris.
Indigo.	Vandyke Brown.
Italian Pink.	Yellow Lake.
Yellow Ochre.	

The medium to be employed is "Newman's Preparation" (see page 34).

Commence with the sky,—take on the palette small portions of the colours required; say, for illustration, gallstone, orange vermilion No. 2, (scarlet,) and prussian blue; mix a tint of each of the colours of a tolerable strength, (if you are about to represent an evening sky, in which there is generally more warmth than any other,) and have each tint in a separate saucer. Commence with a brush full of the blue tint, and float the colour from the top of the picture, replenishing the brush

often until you have got about half way down the sky, when the brush, being nearly emptied of the blue tint, may be dipped into the scarlet, which must be floated on in the same manner for a small space right across the sky, gradually adding more and more scarlet until the tint arrives at the pure scarlet, when you must add the gallstone tint just in the same way, terminating with pure gallstone at the horizon. It should then present a flat surface of the following tints: pure blue, violet, scarlet, orange, and yellow, blending one into the other, more or less perfectly, according to the skill with which they are applied. Whilst this is drying, colour the companion picture in a similar manner, but manage so that the tints unite at places either above or below the changes in the other, so that, when seen in the stereoscope, the two will blend insensibly together. Now paint the distance, using the sky tints with the addition of the local colours, keeping them, however, very faint, and only just a degree or two stronger than those in the sky. Stronger local colour may be used for the middle distance, and the richest colours, such as gamboge, brown pink, burnt sienna, and crimson lake, must be reserved for the foreground and figures. To colour the draperies of the figures, you must take advantage of any division that may occur by one piece of drapery joining or

crossing another, so that you may have only one piece at a time under treatment, as you will find it much easier to tint a space where the boundaries are limited. The colour must always be laid on with a full pencil, so that, when dry, there shall not be any markings of the brush visible. The colouring of flesh, which ought to be done before any other part of the figure, is alluded to last, as it requires more care and dexterity than any other part of the picture. Mix a delicate tint of scarlet and float it over the flesh; when that is dry, take a little rose madder, and, with a very fine pointed brush, tint the lips and stipple the colour delicately upon the cheeks and chin, allowing the gradations in the light and shade of the photograph to shine through, when they will form beautiful grey tints, which you could not hope to imitate without an immense amount of labour and skill.

We have recommended orange vermilion for the flesh wash, although it is not perfectly transparent. A scarlet effect may be produced by washing first with Indian yellow or gamboge, and then with pink madder, using, of course, Newman's "Preparation" as a medium to fix each tint.

Some very beautiful effects may be produced by the following method, which we will call compound colouring. Use one set of tints for one picture on

the slide, and a different set of tints for the other ; for instance, suppose you are colouring a piece of drapery, in one picture use pink madder, and in the other a tint of blue ; when viewed in the stereoscope it will appear a beautiful shot purple. This plan may be adopted with great advantage for skies, draperies, fruit, flowers, shells, &c.

GELATINIZING POSITIVES.

As especially applicable to stereoscopic photographs, and to some extent to paper positives generally, it may be of interest to some of our readers to possess a mode of coating pictures with a film of gelatine, practised with success in France, and producing better results than any other varnishing process.

To 20 grains of the purest gelatine—Italian gela-
 tine is best, isinglass will not do at all—add an ounce of cold water, and place it near a fire until it is dissolved, and then strain through muslin. Provide a piece of well-polished plate-glass, free from scratches and imperfections, of the required size. After cleansing thoroughly and drying, sponge all over with prepared ox gall. Before the ox gall is dry, pour on it sufficient of the hot solution of gelatine to cover the plate in the same manner as collodion, and put it away to set where it will be free from dust. The time required for setting will depend on the

Mode of
gelatinizing.

temperature, varying from half an hour to a few hours.

When it is sufficiently set—which may be ascertained by gently laying a finger on its surface, which should just retain the impression thus made, without being “tacky”—lay the picture gently on the gelatine, face downwards, pressing it, and taking sufficient care to avoid air-bubbles; then leave it some hours to harden thoroughly. Stereoscopic pictures might be left in this condition with advantage, binding the picture and glass together at the edges by a piece of gummed paper. Where, however, this is not intended, a penknife may be run round the edge of the picture, when the gelatine is perfectly dry; it will, if the process has been properly conducted, separate from the glass with ease, and present a highly polished transparent surface, exhibiting the minutest detail with the greatest delicacy and beauty.

As gelatine possesses a tendency to absorb moisture, and also to decomposition, it is doubtful whether this process will tend to the preservation of the photograph. The picture should always be mounted, or, after gelatinizing, it will be apt to curl up. Touching the surface with a warm or moist finger will also injure its gloss.

MEZZOTINT PHOTOGRAPHS.

Touching up paper prints in light and shade chiefly requires care and some knowledge of drawing. Touching in light and shade. The colours to be used must somewhat depend on the tone of the photograph. Brown madder and Indian ink, in the required proportions, will very nearly approximate to the tone of many photographs; whilst others will require these colours, with the addition of a little neutral tint, or others a little sepia. The chief point is to use very little colour at a time, and, in touching the half tone especially, to work with a tolerably dry brush; you will thus see better the exact depth of the tint you are producing than if working with a pencil fully charged with wet colour. A little Chinese white (see Body colour. page 45) may sometimes be used, if the photograph be very heavy and wanting in drawing in the shadows, especially in the hair. But it must be remembered that Chinese white is very cold compared with the tone of most photographs, and will require modifying to harmonize. It may also be used for putting the point of light in the eye. Avoid gum, and everything Gum water. which does not accord with the surface of the print.

REPRODUCTION OF IMPROVED POSITIVES.

Closely connected with the above process, we are tempted, although somewhat out of our province,

to give a method of producing "improved positives," which, although simple in itself, does not seem to have occurred to photographers generally, but which will be found especially useful where several copies of the same picture are required.

Imperfect
negatives.

It is not an uncommon circumstance with photographers to obtain a negative in which the portrait may be perfect, but the background defective. Other cases occur where some minor or even cardinal defect exists in a negative, of which it is impossible to procure a better copy. In such cases the photographer may find a valuable resource in the facility which he may possess for "touching up" a print from such negative in light and shade, making such emendations and improvements as he may require, doing this with sufficient breadth and vigour, and from this amended copy reproducing a negative at his leisure, from which he may print as many perfect proofs as he may require.

A remedy
for defects.

Pictorial
backgrounds.

Again, where an uncoloured portrait is required for publication, it sometimes happens that a background with a few characteristic objects is required, for which "set scenes" or painted screens are not immediately available. This may be easily effected in the same manner, a first impression being coloured in light and shade with such characteristic background as may be required, and from this a

negative obtained giving prints with the perfected pictorial results.

POLYCOLOUR CRAYONS.

These are a new description of oil crayons, especially adapted for colouring photographs. They are exceedingly pure in tint, and bite readily on the surface of either salted or albumenised paper. For tinting the vignette photographs they have an especially good effect, and will be found useful for giving spirited touches to draperies coloured with water colours, in pictures where elaborate manipulation is not required. They will also be found useful for bold landscape effects as auxiliary to the figure, after the style of Sir Thomas Lawrence, Gainsborough, and other masters.

GENERAL REMARKS.

On concluding our instructions for painting photographs in water colours, we must repeat our reiterated remark, that all we have said on the combinations of colour best suited to imitate certain effects in Nature are merely suggestive, and will require perpetually modifying to suit the complexions to be imitated and the tone of the photograph to be coloured. A right method of colouring is the main consideration. There is no need to be anxious to attain high finish at once. To retain the likeness

These instructions
merely
suggestive.

must first be studied, and after that to obtain purity of colour, roundness, vigour, and breadth of light and shadow. Refer constantly to the duplicate copy, and keep the picture well together, as one part of the picture cannot be properly finished before the remainder is sufficiently advanced. Remember throughout, that whilst the shadows of the photograph may be strengthened or subdued, they must never be obliterated. Persevere in aiming at excellence. Never say "it will do," until your work is as perfect as you can make it. Observing this rule, and following carefully the suggestions we have given, you must, if possessing any capacity or aptitude whatever for the undertaking, infallibly succeed.

Persevere.

PHOTOGRAPHIC COLOURS.

POWDER.

FROM the earliest history of photographs, which, as the reader is aware, were first produced on silver plates by the process of Mons. Daguerre, an efficient mode of colouring them has been felt as a serious desideratum; and it is somewhat amusing to glance at the various methods proposed, for some of which patents were obtained. One gentleman proposed to cover the daguerreotype plate with a thin transparent membrane, attaching it to the surface by means of gum, and upon this surface transparent colours prepared with varnish were to be applied. Another proposed to trace the outline of the picture on the glass covering it, and then removing the glass, colour it with the transparent colours used in painting glass for the magic lantern; the glass then being replaced, the picture was seen through the tinted medium. At length the application of dry colours in a state of very fine powder was adopted. By this method, although much the best for the purpose, so imperfect was the preparation of the colours, and so inefficient the method of

Early modes
of colouring.

Imperfect
colours.

using them, pictures were, for many years, as frequently spoiled as improved. The colours sold for the purpose were often utterly worthless, and the instructions for their use we have seen on more than one occasion have been to the effect that they were to be “dusted over the picture!” The variety, brilliancy, and delicacy of the tints, and the excellence of the preparation of those we are about to describe, however, offer the fullest facilities, with even average taste, skill, and perseverance, for producing very beautiful results.

Dry colours:
their use.

Dry colours are used for colouring positives on glass, silver plate, or albumenized paper. They are used, as we have said, in the form of an impalpable powder, and are prepared so as to adhere to the surface of the picture by the simplest manipulation. The following list comprises every tint that can be desired for flesh, draperies, or backgrounds:

FLESH, fair, No. 1 and No. 2, and dark No. 1 and No. 2.—The fleshs No. 1 are invaluable for the high lights of flesh, and in delicate complexions as a general local tint. No. 2 fair, and No. 2 dark, are used for the local colour of the complexions their names indicate. They give a clear, healthy effect, altogether unlike the brick-dust powder so often sold as flesh colour.*

* We may here remark once for all, and at the risk of appearing prejudiced, that we are speaking of the colours

COMPLEXIONS, Nos. 1, 2, and 3.—No. 1 is a pure, brilliant flesh, useful for the local tints of florid complexions, or, in combination with No. 1 flesh, gives a fine healthy colour for fair complexions. No. 2 approximates more closely to carmine, and is valuable for the rosy hue of the cheeks in fair persons. No. 3 gives a fine life-like colour to the cheeks of dark or bronzed complexions.

LIPS.—A bright carnation which bites well, suitable in most cases for lips, and for a variety of other purposes.

CARMINE.—A very pure brilliant red, useful in some complexions for the rosy hue, and for draperies.

prepared by Mr. NEWMAN. After many years' constant practice in the use of dry colours, and after having tried, we believe, those of almost every maker, we unhesitatingly aver that there are none in any respect comparable to those we are now describing. An almost universal characteristic of powder colours is, the dull, heavy effect they give to the picture, however brilliant in themselves the colours may appear. The special difference in Mr. NEWMAN's colours is, that they do not produce this effect. Clear and brilliant in themselves, they give a life-like effect to the picture. Even want of skill in the colourist does not impair the brilliance and purity of the results, and with average skill and care the very finest effects may be obtained. The extreme ease and simplicity with which they are manipulated, preventing waste, make them the cheapest as well as the best.

CRIMSON.—A very vivid and powerful red ; works well. It is not generally suitable for flesh, but useful in draperies.

DAMASK.—A very deep crimson, very valuable in draperies, and with a little green may often be used with advantage in the shadows of flesh.

CARNATION.—A life-like rosy tint for brightening brilliant complexions and draperies.

LAVENDER.—A very valuable colour, working exceedingly well ; useful in skies as well as draperies.

VIOLET, PLUM, AND PUCE.—Three analogous colours, the latter two each warmer, or redder, than the preceding ; all useful for draperies.

BLUES, Nos. 1, 2, and 3.—Nos. 1 and 2 are light blues, suitable for skies. No. 1 is very light, suitable for a hazy, cloudy sky. No. 2 is a peculiarly useful colour, of unequalled brilliancy and permanence, and works admirably. No. 3 is darker and more suitable for draperies.

YELLOWs, Nos. 1, 2, and 3, GOLDEN YELLOW AND ORANGE, comprise yellows of every tint ; will frequently be found useful in landscape backgrounds, draperies, and light hair.

HORIZON.—Useful in landscape backgrounds, and occasionally in draperies.

WHITE, SATIN WHITE, AND WHITE FOR SOLARIZATION.—Three whites of slightly different tones; the latter is used for correcting the blue tints of the whites in solarized daguerreotypes.

PEACH.—A very delicate and beautiful tint, which bites exceedingly well. It is useful occasionally in the shadows of flesh in fair persons. It has a very good effect in light draperies, and in the high lights of purple draperies, especially of velvet. Useful also occasionally in the shadows of light, fleecy clouds.

BROWNS, Nos. 1, 2, 3, and 4.—No. 1 is a valuable light brown, of a warm tone; very useful for light hair, or, with a little orange added, for red hair. No. 3 is a similar colour, but darker. Nos. 2 and 4 are light and dark browns of a colder tone. All are useful for hair, draperies, and backgrounds, either plain or landscape.

GREYS, Nos. 1, 2, and 3, AND SILVER GREY.—Four valuable colours for plain backgrounds, and for clouds. Silver grey is a beautiful colour, which will be found useful for many purposes.

ROSE, PINK, AND CLARET.—Three fine bright colours; useful in draperies, &c. The rose is a very beautiful and delicate tint, valuable, in combination with No. 1 complexion, in the carnations of delicate fair persons.

GREENS, Nos. 1, 2, 3, and 4, AND DISTANCE.—These greens, light and dark, cold and warm, with the DISTANCE, a greenish blue, will be found valuable in landscape backgrounds, as also in draperies.

PERMANENT SCARLET.—A very brilliant scarlet, slightly inclining to orange.

BLACK.—Occasionally useful in deepening shadows and in backgrounds; but in good photographs it is rarely required.

BRUSHES.

Bad pencils
useless.

Kind of
pencil
required.

To prepare
for use.

It is absolutely necessary that the amateur should have good and suitable pencils to commence with; nothing will be more likely to cause him to throw up the attempt in disgust than unsuitable pencils, by which it is impossible to apply the colour properly. They should be of the best material, and manufactured so as to carry a firm, well-supported point. This should result from the careful selection and arrangement of the natural points of the hair, and not from being *ground* to a point—a practice resorted to by inferior makers to gain a factitious point. For general purposes Nos. 1 and 2 camel's hair will be found most useful. They should be prepared for use from time to time by briskly agitating in a glass of clean water, and then drawn through the lips to form a point, in which form

they must be suffered to dry, and are then ready for use. A good stock ready pointed should always be kept at hand, as it is not desirable to use the same pencil for dissimilar colours. A few larger camel's hair pencils will be found useful in backgrounds, and a few small sables for fine lines. Common pencils, which at once spread into the form of a dusting brush when dry, are worse than useless.

In addition to colours and pencils, an elastic India rubber bottle, with tube, will be required, for blowing off superfluous colour, as blowing with the lips should in no case be attempted, on account of the danger of spotting the picture with moisture. The vulcanized India rubber blowers should be avoided, especially if daguerreotypes are to be coloured, as the sulphur acquired by the India rubber in the process of vulcanizing is sometimes given off in minute particles, which immediately cover the silver plate with black spots. This remark will explain to many who have coloured daguerreotypes the cause of a source of annoyance which has appeared unaccountable. A large camel's hair dusting brush, gold and silver shells, and a bottle or tube of Chinese white, will also be required.

The colourist will find his account in procuring at the outset a complete box of colours, in which he will find the best possible selection of tints for

India rubber
blowers.

Gold and
silver shells.

A complete
box neces-
sary.

flesh, draperies, backgrounds; and also a complete assortment of pencils, and other requisites for his purpose. Facilities for plenty of variety in colouring will make the work easier, because more interesting to the colourist, as well as more satisfactory in result.

VARNISH.

Want of a
good varnish.

A good varnish for glass positives, presenting a surface suitable for receiving colour, has been felt as a want by all practical photographers; and notwithstanding the number and variety prepared for the purpose, under the various names of crystal, vitreous, chloroform, ambrotype, amber, &c., &c., none have been found fully to meet the requirements of the artistic colourist. A great misapprehension, we think, as to the proper characteristics of such a varnish, has prevailed amongst the manufacturers, and we fear to a large extent amongst photographers themselves. To cover the picture with an even layer of some hard transparent gum, to serve a protective purpose, has in most cases appeared their only aim. This, whilst it has enriched the blacks, has in all cases lowered the whites, and given the picture a common, glazed, inartistic appearance. Just as reasonable, we take it, would it be to varnish in like manner a delicate ivory miniature. A varnish for glass positives, to

Mistakes on
the subject.

give the greatest facilities to the colourist, and have the most artistic effect when finished, should not present a hard glassy surface off which the colours must blow like dust; but a surface which, whilst entirely free from all "tackiness," should nevertheless present a tooth to the colour. This should result from a slightly granular effect in the surface; not, let us be clearly understood, the least degree granular in appearance to the eye, but to the touch of the pencil. Such a varnish, whilst enriching the blacks, and giving the shadows transparency, should leave the lights somewhat "flat" or dead, and scarcely in any appreciable degree lower their colour. On such a surface the dry colours will adhere like crayons—it is, in fact, a species of crayon drawing of which we are writing—on it the finest effects are possible to skill and patience.*

What it
should be.

Crayon
drawing.

METHOD OF COLOURING.

The method of colouring is much the same, whether on daguerreotypes, positives on glass, or on paper. Daguerreotypes are coloured in all respects as glass positives; and as they are not usually varnished, when once coloured throughout, they are finished.

Daguerreo
types.

* A varnish largely possessing these characteristics, and drying quickly besides, has recently been introduced by Mr. Newman. It will be hailed, we doubt not, by photographers with great satisfaction.

Positives on
glass.

The positive on glass may be coloured either on the collodion surface, or varnished and then coloured. As, however, we wish to give the mode of producing the *best results*, we will describe our own method. The picture is first coloured on the collodion surface. It is well, perhaps, to commence on the forehead, using flesh No. 1, fair or dark, as the complexion may require. A small portion of colour is taken up on the pencil and applied with a circular motion, on the high lights first, and gradually softening towards the shadows, taking care at all times not to overload these with colour, or the roundness of the picture will be destroyed. Having coloured the lights of the forehead, nose, and chin

Flesh tints.

with No. 1 flesh, now with No. 2 flesh, fair or dark, commence on the lights of the cheeks, softening into the shadows, and joining the high lights already coloured. If the complexion be very fair and delicate, a little No. 1 flesh may be combined with No. 2 for this general tint. The outlines of each feature must be carefully traced, and caution used to avoid covering the shadows of the mouth, nostrils, &c., as well as to avoid touching the hair or eyes with flesh colour. Proceed in like manner with the

The hair.

neck, arms, hands, &c. The hair, if golden or red, may now be coloured, touching only the lights and half tones, and avoiding the deepest shadows. As the varnish will materially lessen the brilliancy of

the first colouring, a little yellow or even orange may be safely used for light hair; and as the less the hair is touched after varnishing, except on the high lights, the better, it is well to colour sufficiently bright at first, allowing for the effect of the varnish.

An even, delicate coating of flesh colour having been obtained, proceed with the draperies. It is here necessary to remark, however, that whilst brilliancy and depth are obtained in some colours by colouring before and after varnishing, with others no such advantage is gained, and it is comparatively useless to apply them before varnishing. A little experience will soon suggest where the line is to be drawn. We may suggest generally that flesh^{Colours used before var-}es, reds, greens, and yellows may be applied first nishing. with advantage; whilst browns, purples, light blue, and some other colours are best left until after varnishing.

In colouring draperies proceed on the same ^{Draperies.} principle as in flesh, commencing on the lights and softening into the shadows. Great care is here required to avoid covering the deepest shadows and destroying their transparency.

The first colouring completed, carefully blow away with the India rubber bottle every particle of colour which has not adhered to the surface, otherwise it will run with the varnish. Before varnishing also observe if there are any spots or imperfec-

Spots, to
touch out.

tions in the picture. Black spots, which will occasionally occur in the background of otherwise good pictures, may be carefully touched out with a little of the Chinese white, modified with such other water colour as most nearly resembles the tint of the background. If the eyes have moved or are not perfectly sharp, they may, if the colourist possess sufficient skill, be touched with water colours, the pupil defined and the markings of the eyelash deepened, and the light put in with a little Chinese white. But it must be remembered this requires great care, some skill, and knowledge of the actual drawing of the eye. Without these it is more easy to spoil than to improve the picture by the attempt.

Imperfec-
tions, to
remedy with
water
colours.

Varnishing.

The picture is now to be varnished, blowing carefully to remove the dust, &c.^e; the varnish is to be flooded on to the plate in the same manner as collodion, and with the same care to secure an even coating, and drained off at one corner. A dusty atmosphere should be avoided whilst varnishing the picture.

Permanency
secured.

When quite dry, the picture is again ready for colouring. A material advantage has been gained, notwithstanding that all the colours already applied have lost so much in brilliancy. One great objection urged against the use of dry colours, has been their tendency to fade. Here, however, they are dry colours no longer, the varnish combining with the

colour on the plate has formed a coating similar to oil paint, and possessing much of its stability. Moreover, the colours which lay on the half-tones and shadows, somewhat obscuring them, having combined with a transparent vehicle, have lost any approximation to opacity they might have possessed. The colour on the highest lights, combining with the varnish, has formed a surface on which the subsequent colouring will bite with the greatest tenacity.

The last remark will have suggested to the colourist the extreme care with which the second colouring must be conducted. Proceeding as in the first instance, but with the remembrance that now the colours are to be used exactly of the tint and brilliancy required, the high lights are recoloured with No.1 flesh; the local tint, with No. 2 flesh, fair or dark, as may be required; the cheeks heightened with Nos. 2 or 3 complexion. Great care must now be used not to destroy the roundness and relief of the face by entirely covering the half-tones and shadows with flesh colour. If the colourist have sufficient skill, a great improvement may be obtained by delicately touching the shadows with an approximation to the requisite shadow colours of flesh. A little damask and green form a useful grey for this purpose in dark or florid complexions, the green prevailing in the former, and the damask in the latter. For very fair complexions

Second
colouring
requires
extreme care.

Shadows
must not be
obscured.

the peach forms a delicate shadow colour, giving as it combines with the flesh an approach to the “pearly tints” of the water-colour painter. The lips may now be touched with the colour for the purpose, modified as the case may demand. The upper lips, being in shade, must be touched with very great care to receive very little colour, as there is danger of making it appear swollen. The nostrils may be touched with carmine or damask. The iris of blue or light grey eyes may be touched with a suitable colour; but dark eyes, grey or hazel, are best untouched. For colouring the lips, eyes, and similar fine lines, a small sable pencil is most useful. The eyebrows and hair, where required, are now to be retouched.

Eyes and
hair

Draperies.

Proceed with the draperies in a similar manner. Great care is required to preserve the peculiar texture of various fabrics, which is rendered with such delicacy and faithfulness by photography, and which it is very easy to spoil by colours.

Back-
grounds.

The background is next to be coloured. To produce the best effects requires some skill and judgment, and much more of the beauty of the picture depends upon its management than most photographers seem aware of. Careful perusal and attention to the principles laid down in the chapters on the Harmony of Colour will enable the artist to effect everything that can be desired. If a plain

background be intended, three points should be remembered regarding it :—Such colours should be chosen as best harmonise with, and give value to, the colours in the model ; it should be so subdued and devoted to repose as never to distract attention from the principal figure ; and it should be so relieved by light and shadow as to give an atmosphere to the picture, and in no case suggest the idea of the figure being inlaid. Almost every colour may be used in backgrounds, but various combinations of the greys, greens, browns, and purples are most useful for the purpose, and admit of endless variety. The background should be shadowed towards the lower part of the picture ; and a light thrown on to the upper portion, in the same direction as the light falls on the head of the sitter, has a good effect. No. 3 brush is best for producing a smooth, even background ; a smaller pencil being used to bring up the colour to the outline of the figure.

Points to be remembered.

Colours to be used.

A landscape background, consisting chiefly of sky, is often a favourite ; it requires judiciously managing, and the effect of the blue in giving a yellow effect to the flesh should be remembered. The head should be painted in such case to suit the background to some extent. The blue must be laid on carefully and smoothly, with a No. 3 pencil, brighter towards the zenith and becoming more of

Effect of a landscape background.

Sky, to colour.

a lavender tint towards the horizon, as a general rule. As a sunset effect is often admired, the line of the horizon is drawn with the colour for that purpose. Some slight artistic knowledge is absolutely necessary to succeed in producing a good background of this kind. We may call attention, however, to one or two points which the amateur must bear in mind. The line of the horizon should not be too low in the plate, and should be undulating, as a straight line would generally have an unnatural effect. The yellow should merge into red and that into lavender, gradually blending into the blue. Clouds low in the horizon should be of a warm tint from the golden reflections of the sunset. Clouds higher in the sky should be of a light fleecy character, and should be drawn with sufficient light and shadow to give them relief from the sky. Silver grey will be found useful for the lights; and darker greys, lavender, peach, &c., for the shadows, which should gradually blend with the blue. It is the practice of some good colourists to leave spaces in the sky untouched with blue, to receive the clouds; in our own practice, however, we have found it simpler to put in the clouds after colouring with blue; No. 1 flesh, or silver grey, as the case may require, giving the lighted edge with sufficient brilliancy. The distance of the landscape should be coloured with the colour for that purpose,

Horizon.

Clouds.

Landscape.

warmer greens, yellows, and browns being used as the landscape advances to the foreground. It is not necessary that much definite drawing be introduced into the landscape; general effects, without much sharpness, only are required.

As the shadows of the landscape, as also of any effects of drapery or architecture in the background, are obtained by leaving the plate untouched, the colour of the background before colouring should be of a tolerably dark grey.

Shadows—
how ob-
tained.

After finishing the background and draperies, once more retouch the face, which will now appear somewhat modified by the surrounding colour.

Retouching.

Positives on glass, produced by what is termed the “Alabastrine process,”* offer facilities for effecting finer results with dry colours than can be obtained on any other kind of glass picture. The whites of the photograph being purer, the detail more perfect, whilst the surface presenting a “tooth” like crayon paper, affords opportunity for an extremely brilliant and effective style of colouring. The mode of proceeding is somewhat different to that we have just described. The picture is varnished, with the varnish provided for the pur-

Alabastrine
photographs.

* It is no part of our purpose here to speak of special photographic processes, as works on the subject abound. Particulars regarding these pictures may be found in the “Photographic Teacher,” published by H. Squire and Co.

pose, before commencing to colour; then proceed with the care recommended above for the second colouring, using similar tints for the lights and shadows to those recommended in the chapter on Water Colours. If greater brilliance is desired, the picture may be varnished again, and then recoloured in the same manner.

Lace and
jewellery.

Lace, flowers, and jewellery may, where necessary, be delicately put in with water colours, or the latter with gold moistened from the gold shell. Silver ornaments may be put in with the silver shell, or, what is perhaps preferable, the aluminum shell, a new invention, which, we believe, though not so brilliant, will not tarnish. But care must be used not to give a vulgar, inharmonious effect to the picture by using too freely gold or silver in ornaments.

To remove
superfluous
colour.

When the picture is quite coloured, a clean pencil with a fine point should be taken, to remove such portions of the colour as may accidentally have touched the shadows of the hair or draperies. Sometimes the point of the pencil may be touched against the hair or skin of the colourist, so as to take up the merest *souppçon* of animal oil, by which means the superfluous colour on the plate is easily removed.

Dry colour-
ing on paper.

Positives on albumenised paper, or on salted paper sized with a preparation for the purpose—but, as a rule, salted paper photographs should be

coloured in oil or water colours—may be coloured in the same way. Perfectly sharp, well defined, brilliant pictures, with plenty of high light and half tone, are necessary for the purpose. Still greater care and skill are here required to produce the best results; and as there is no varnishing nor second colouring, the colours must be put on with as much purity and delicacy as possible to commence with, depth and brilliance being obtained by repeated applications and the force of contrast. The paper positive should be mounted on cardboard, and hot-pressed, or passed between steel rollers, before commencing, by which a glossy surface is obtained. Paper positives, coloured in this manner, have the advantage of preserving with the greatest accuracy all the original features of the photograph, the danger of losing which is the greatest drawback to the employment of oil or water colours.

In some paper positives, where detail is absent in the shadows, certain little “tricks of art” are admissible. The point of a knife or eraser is used to abrade the surface, somewhat in the manner of stippling; over the lights thus obtained the proper colour is then used, and if it be well done, excellent effects may be produced. The use of a little Chinese white, or other body colour, stippled on for a similar purpose, is sometimes advantageous.

Detail,
obtain.

The stump will be found useful in *rubbing in*

dry colour on paper proofs, and many effects may thus be produced which in the mere *laying on* of colour are absent, such as texture in draperies, and transparency in the shadows of clouds, &c.

NON-INVERTED COLOURED POSITIVES.

Non-inverted
pictures.

It will be remembered that all glass positives being coloured on the collodion film are inverted, or transposed as regards right and left. A method of colouring, by which the picture can be viewed from the glass side of the positive, which presents the sitter in his true position, right and left not transposed, has recently excited some attention. The mode of producing this result is simple, and, when well done, presents somewhat the effect of enamelling on glass. It depends in the first instance, however, on the collodion film being permeable. This is sometimes the case in ordinary positives taken with a collodion the pyroxyline of which has been made at a high temperature, thus giving a powdery film. This permeable film, however, is much best obtained by the "Alabastrine process," and the best specimens we have seen of the non-inverted coloured positives have been produced by it. The picture having been varnished and coloured, —and, if necessary, varnished and coloured again, —a little extra care being used to obtain brilliancy in the carnations, is to be varnished once more with

“Penetrating Varnish,” provided for the purpose, which has the effect of projecting the colour thoroughly into the collodion film; the result is, that the positive then viewed from the glass side presents a picture as vividly coloured as on the collodion side. The effect may be still further improved by going over the face again with No. 1 flesh. It is important that these pictures should be taken on colourless glass, the ordinary green glass materially injuring the tone of the picture. It must be remembered, also, that the “Penetrating Varnish” materially affects the tints of many of the colours. This modification of tint must be allowed for in applying the colour, experience dictating the extent of the modification to be expected. Without brilliancy in the colour itself, no satisfactory effect can possibly be produced.

Since the first edition of this Work was published, experience has suggested some additional details in colouring this class of pictures. Very little idea can be formed, whilst colouring the picture on the surface, of the amount of depth or brilliancy of colour which will permeate the film. It is, nevertheless, of the utmost importance to know this before applying the “Penetrating Varnish.” An approximate idea may be formed by examining the back of the picture after each application of the Alabastrine varnish, before it has dried; from its

appearance then, a very good idea may be formed of the depth and tint already obtained. We mention the *tint* obtained as well as the depth, because the tint will, in many cases, appear somewhat different to the colour applied on the surface. It must be remembered that the Alabastrine picture consists of a mass of white particles, which have a similar effect on the colour permeating them to that which would be produced by adding white to the colour before it was applied. Some colours are also modified by the effect of the varnish. For these reasons, carmine is unsuitable for complexion tints, having a tendency to fall somewhat cold and blue. Mr. Newman has therefore manufactured a tint expressly for this purpose. The No. 2 complexion, as now prepared, will give a healthy, rosy hue on permeating the film, notwithstanding the white particles of the photograph, and the effect of the varnish.

To secure the best result, some parts of a picture will require more repeated applications of colour than others; this depending on the class of picture and the intensity required. The following general suggestion will be found useful in many cases:—Colour the flesh tints four times, watching the effect at the back, between each colouring, whilst the varnish is wet, to see that the cold grey of the photograph is yielding to the warm, healthy hues of

flesh, and that the exact tint of the complexion is being attained; the hair will require colouring once or twice; the draperies, some once, some several times, depending on the nature of the colour, and the amount of intensity desired. As a general rule, backgrounds will only require colouring once; additional effect may sometimes be gained by repeated colourings; but great care is required in attempting this, as the extensive mass of colour in a background is sometimes apt to be moved by the varnishing, and run on to the face, &c. Where once is sufficient, it should be done last, as there is no danger of the colour being disturbed or running, on the application of the "Penetrating Varnish." The danger of masses of colour spreading or running by repeated varnishing, is the chief risk to be guarded against, and care must be taken, before each additional application of the varnish, to see that no loose colour remains on the surface of the picture, but that all the colour applied is thoroughly worked in and incorporated with the surface.

Where the non-inverted position is not an object, many of the pictures treated as we have described by repeated colourings and a final application of "Penetrating Varnish," have an exceedingly good effect on the collodion side, very much resembling fine miniatures in oil. They constitute, in fact, the best possible imitation of delicately-manipulated

oil paintings in general effect, and possess at the same time a similar permanency and durability.

Velvet
instead of
black
varnish.

These pictures, and the Alabastrine photographs, should be backed with velvet of marone or violet tint, instead of black varnish. Indeed, all glass positives are frequently best so backed, to preserve warmth in the shadows. They should *always* be covered with *colourless* instead of green glass.

Colourless
glass.

COLOURING IN OIL.

THE photographer who desires to succeed in colouring his productions *artistically*, should certainly possess a knowledge of drawing, although by using only transparent pigments he may avoid the danger of destroying the resemblance which arises from the use of opaque colours, some of which, however, are essential to the production of that brilliancy and force which should characterise a well-executed and well-painted photograph. Some colourists have awarded the palm to water colours for this rather insufficient reason—that the use of oil demands the experience and skill of an artist; forgetting that a lack of skill in the individual can in no way disparage the art itself; but if the advocates of water colours be right in concluding that the use of oil demands greater skill and ability, their argument must surely recommend *oil colours*, inasmuch as they guarantee in their use the competency and talent of the colourist: but it seems to the writer (and he has had long experience in the use of oil and water colours), that, in either art, he who has the highest order of artistic merit will succeed best, and that it is as easy to do *a little* in the one as the other.

Some knowledge of drawing necessary.

Water colours have no advantage over oil.

To select the
photograph.

The amateur in colouring photographs in oil should select for practice a thoroughly good positive upon salted or albumenised paper. The picture must be free from stains, sharply defined, displaying well-arranged light and shade, and so printed that, without being too dark, every delicate gradation of tone, from the highest light to the deepest shadow, can be clearly traced, because a badly-taken or badly-printed photograph calls for many subtle contrivances, only acquired by experience and practice, and because the less difficulty met with in beginning, the greater is the encouragement to persevere, and by perseverance only is success ensured.

Mode of
preparation.

To prepare the photograph, mount it free from dust, carefully coat it with "Newman's Preparation,"—sometimes two applications will be necessary—and let it be rolled by some hotpresser.

Material
required.

The necessary materials for colouring in oil should be obtained ready prepared. The amateur will require colours, nut oil and poppy oil, varnishes, brushes, palette, rest-stick, and palette knife. A palette with a white surface is best. In selecting brushes, see that they come to a firm smooth point, spring well after pressure, and taper sufficiently; the sable pencils are best for the purpose. The following colours are required: white, Naples yellow, yellow ochre, raw sienna, burnt sienna, Mars orange, light red, extract of vermilion, vermilion,

pink madder, crimson lake, Indian red, raw umber, burnt umber, terra verte, emerald green, ultramarine, prussian blue, indigo, ivory black, pink and brown madder, Indian lake, Vandyke brown, brown ochre, Antwerp blue, and whatever other colours the drapery, background, or accessories may demand. Procure also a tube of megilp and sugar of lead—the one as vehicle, the other to assist colours which are bad driers.

The necessary tints are as follow :

For the first painting.—White and Naples yellow, Tints for first painting. with a very small portion of the extract of vermilion. The same, with an addition of vermilion or light red. White and terra verte. The same, with a little Indian red. White and pink madder, with a little vermilion. Light red and burnt umber, white and Indian red.

For the second painting.—White and Naples yellow. Tints for second painting. The same, with rose madder. The same, with a little emerald green. White, light red, and emerald green. White, Indian red, ultramarine, and raw umber. White, madder purple, and ultramarine. Vermilion and raw umber.

For the third painting.—Madder brown. Raw Tints for third painting. sienna and Indian red, with a little lake. Lake, burnt sienna, and a little vermilion. White, pure, and with Naples yellow and pink madder. Ultramarine and white.

The student who mixes these tints thoughtfully will at once see their uses in the different stages of his work, and his practice will suggest all the modifications and alterations which his model may demand.

PAINTING THE PHOTOGRAPH.

Mode of
painting.

Use sufficient megilp with your colours to render them rather thin and transparent, but let the lights be opaque and well coated with colour; lay your pigments in their place with as little after-disturbance as possible, to secure their purity. Commence by carrying a warm tint (light red and burnt umber)

Shadows.

over the darkest shadows. Use the white, terra verte, and Indian red for the lighter shadows; then white and terra verte for the cold half tones; then,

Lights.

with less megilp, paint in the high lights with white and Naples yellow, graduating, thence, with the aid of the other tints given, into the local colour and shadows; this done, strengthen the nostrils, the

lines of the eyelids, and that separating the lips, keeping them, though well defined, far from hard. Carry a line of brown or indigo, as may be required,

The eyes.

round the iris of the eye, put in the local tint, the reflected light, and the pupil; remember that the part called white is grey, more or less light, according to its position, form, and the length of the eyelash. The

The eye-
brows.

eyebrow and hair next call for attention: keep the

former soft, transparent, and hair-like; the latter soft, with its divisions well but not too strongly defined, and its character carefully preserved; it is transparent where it meets the brow, and requires there great nicety of treatment; nothing can be more unnatural than the hard line sometimes seen in very ill-painted portraits, where the hair and brow or temple meet. Carefully consider the gradations of tint by which the hair and flesh are softened into each other, and note the shadows cast by raised or over-falling locks, &c. The high lights of the hair, partaking of the nature of polished bodies, will be bluish, being colder (by contrast) as the hair is darker. Use grey and shadow tints to blend the hair and flesh. The hair

In painting the mouth, great care and attention must be given to the preserving of its form and expression, or the resemblance may be very speedily lost. The mouth.

Black coats are first glazed with a warm transparent black, into which paint the lights with different tints of black and white, strengthening the shadows with Vandyke brown, and a little lake or bitumen. Black coats.

In painting the hands, carefully preserve the high lights and half tones, keep the knuckles, tips of the fingers, and the exterior portions more rosy than other parts, and put in the divisions between the fingers with a warm shadow tint. The hands.

Draperies.

All draperies may be treated as recommended in the case of a black coat, using, of course, such colours as a study of the fabric itself may suggest.

COLOURS FOR HAIR.

Light hair may be made with Vandyke brown and ochre, with raw umber for the shadows; raw umber for the local tint, and the same mixed with Naples yellow for the lights; the greys are the same as used for flesh.

DARK HAIR.—Use a little black, with some Vandyke brown and lake; keep the reflections cold and the local tint rich and warm; for black hair use a larger proportion of warm black. Bitumen is a useful colour in this portion of your work, and brown madder mixed with French blue. In painting hair, carefully preserve the greys or half tones.

TINTS FOR BACKGROUNDS.

Black, white, Indian red, and a little vermilion.

Black, white, and lake.

Black, and burnt sienna.

Black, and Indian red.

Brown ochre, white, and burnt umber.

Prussian blue, ochre, black, and white.

Terre verte, raw umber, and burnt sienna.

Black, white, and burnt umber.

Umbre and yellow ochre.

Black, white, and burnt sienna.

FOR SKY BACKGROUNDS.

White, yellow ochre, and a little extract of vermilion.
White, and yellow ochre.
White, and extract of vermilion.
Vermilion, white, and French blue.
Ditto, with black.

FOR DISTANT SCENERY.

Vermilion, indigo, and white.
Terre verte, white, and burnt sienna.
Prussian blue, ochre, and white.
Madder brown, and Vandyke brown, &c.

FOR STONE WORK.

Black, white, and yellow ochre, or burnt umber.
Black, French blue, and white.
Black, white, and umber.

FOR DRAPERIES.

Linen.

White, and blue black.
White, black, and burnt umber.
And white for the lights.

White Satin.

White.
White, raw umber, and ivory black.
White, black, and Indian red.
Brown ochre, white, and a little French blue.

Blue Satin.

Prussian blue and white.
Ultramarine and white.
Ivory black, ultramarine, white, and a little vermilion.
Brown ochre, ultramarine, and white.

SCARLET COATS.

Crimson lake, and king's yellow.

Crimson, lake, and vermilion.

Vermilion.

Crimson lake, and Indian red.

Extract of vermilion.

Carmine and yellow.

GOLD.

Yellow ochre and raw umber.

Yellow ochre.

Naples yellow.

Burnt sienna and raw umber.

SECOND PAINTING.

To soften the
work.

lazing.

When the first painting is perfectly dry, soften the work by passing over it a brush charged with poppy oil, and then remove the oil with a piece of soft leather. Glaze the whole of the face with an appropriate tint; repaint the shadows with transparent colours, strengthen and brighten the lights, improve the blues, greens, and greys of the flesh, and soften the lines; repaint the background, and blend its tints with a clean soft brush; strengthen the folds of draperies; use glazing tints wherever practicable; and preserve the colours warm, clear, and bright.

THIRD PAINTING.

Finishing
touches.

The second painting having dried, finish the picture with transparent touches and markings to

strengthen the shadows, force the lights, and secure a masterly and artistic style of finish. When this is thoroughly dry, the picture is ready for varnishing.

Oil paintings are generally best left unvarnished for some months; but as professional photographers are generally compelled to complete their works within a few weeks at most, it is desirable to use mastic varnish. The reason for this lies in the fact that mastic varnish is the most colourless and brilliant, and may at any time be easily removed without deterioration to the picture; whilst copal varnish, being very hard, can only be removed by chemical agency. Especial care must be used not to apply the varnish until the last painting is thoroughly dry and hard. It is necessary that the room in which varnishing is conducted be moderately warm, and a bright day should, if possible, be chosen for the operation.

In conclusion, those who cannot draw should use their colours well thinned with megilp, to preserve their transparency. Those who can draw should not, with imprudent conceit, refuse that care to the preservation of the photograph without which it is impossible to succeed in photographic colouring.

Preserve the
photograph.

CONCLUDING REMARKS.

Repetition. THE general principles regarding colouring herein enunciated have been, at the risk of redundancy and repetition, sometimes reiterated in the instructions for different methods of colouring. Where such reiteration has been avoided, the reader will remember that the principles are not the less applicable throughout, and that the instructions for one style of colouring will often be found to contain hints equally applying to all styles. Bearing this in mind, it will be found, we think, that nothing which could aid the amateur in obtaining a practical knowledge of the subject has been omitted from the book.

Condition of success. Success must depend on the individual, and, after close attention to the instructions, will result from natural aptitude, care, and perseverance.

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Cadmium Yellow	5	0	— Umber	1	0
Gallstone	5	0	British Ink	1	0
Madder Carmine	5	0	Black Lead	1	0
Purple Madder	5	0	Chinese White	1	0
Permanent Crimson	5	0	Chinese Vermilion	1	0
Scarlet	5	0	Chrome Yellow 1, 2, 3. ..	1	0
Smalt	5	0	Cologne Earth	1	0
Chromium, Green Oxide of	3	0	Dragon's Blood	1	0
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Intense Blue	3	0	Flake White	1	0
Intense Brown	3	0	Gamboge	1	0
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— Orange	3	0	Ivory Black	1	0
— Yellow	3	0	Indian Red	1	0
— Violet	3	0	Italian Pink	1	0
— Brown	3	0	King's Yellow	1	0
Malachite Green	3	0	Light Red	1	0
Lemon Yellow	3	0	Lamp Black	1	0
Orange Vermilion, 2	3	0	Neutral Tint	1	0
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Rose Madder	3	0	Olive Green	1	0
Harding's Tints.			Orange Ochre	1	0
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Cobalt Blue	2	0	Roman Ochre	1	0
Brown Madder	1	6	Raw Sienna	1	0
Constant White	1	6	Raw Umber	1	0
Chalon's Brown	1	6	Red Lead	1	0
Crimson Lake	1	6	Red Chalk	1	0
Indian Yellow	1	6	Red Orpiment	1	0
Purple Lake	1	6	Sap Green	1	0
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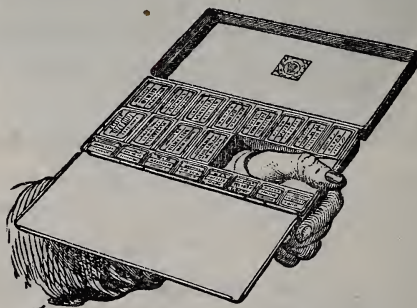
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Burnt Umber ..	0 6	Indian Red ..	0 6	Permt. Blue ..	0 6
Brown Pink ..	0 6	Indian Lake ..	0 9	Raw Sienna ..	0 6
Brown Madder	1 6	Indian Yellow ..	1 4	Raw Umber ..	0 6
Brown Ochre ..	0 6	Indigo ..	0 6	Roman Ochre ..	0 6
Blue Black ..	0 6	Italian Pink ..	0 6	Rose Madder ..	1 6
Black Lead ..	0 6	Ivory Black ..	0 6	Scarlet Lake ..	0 9
Bone Brown ..	0 6	Lamp Black ..	0 6	Sugar of Lead ..	0 6
Burnt Lake ..	0 9	Light Red ..	0 6	Terra-verte ..	0 6
Burnt Carmine	3 0	Lemon Yellow ..	1 4	Vandyke Brown	0 6
Cologne Earth	0 6	Mummy ..	0 6	Venetian Red ..	0 6
Chrome Yellow	0 6	Mars Colours ..	1 4	Verdigris ..	0 6
„ Deep ..	0 6	Malachite Green	1 6	Vermilion ..	0 9
„ Orange	0 6	Madder Carmine	3 0	Vermilion (Ext. of)	3 0
Crimson Lake ..	0 9	Megilp ..	1 0	Ultramarine ..	16 0
Cappah Brown	0 6	Naples Yellow ..	0 6	„ Ash ..	3 0
Cadmium Yellow	3 0	Orpiment ..	0 6	„ French ..	1 4
Carmine ..	3 0	Olive Lake ..	0 6	Yellow Lake ..	0 6
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Very firm, rich and full in color, of the purest Cumberland Lead.
H, HH, HHH, HHHH, F, FF, HB, EHB, B, BB, BBB. 6d. each.

DITTO DITTO, of **EXTRA THICK LEAD**,

FF extra, EHB extra, and BBB extra. 1s. 6d. each.

NEWMAN'S ARCHITECTURAL PENCILS,

Very firm, and free from grit, F, HB, H, HH, HHH, and HHHH.

NEWMAN'S STUDENT DRAWING PENCILS,

These Pencils are very strongly recommended for Schools, &c., &c., they are made of Cumberland Lead, on a new principle, are rich in color, have no grit, and are very firm.

H, HH, HHH, F, FF, HB, EHB, B, BB, BBB. 3d. each.

Case containing Six, Twelve, or Twenty-four of the above Pencils assorted.

Brockedon's Pencils
Brookman and Langdon's ditto
Mordan's ditto
Burgess's ditto
J. D. Harding's ditto, single or in sets
Riddle's Lead and Slate Pencils
Pencil Cases, in Leather and Paper
Patent Plombagine Pencils
Leads for ditto
India-Rubber—Bottle or Patent

India-Rubber Pencils
Port-Crayons—Silver, Brass, Steel, &c.
Crayons, in sets or singly
Crayon Pencils, in sets or singly
Conté-à-Paris Black Crayons
French Black Chalk
Italian, Grey, Red, and White ditto
Lithographic Chalk—Black & White
Charcoal for Sketching
Ditto Pencils

FRENCH COLORED CRAYONS.

						£	s.	d.
Box, containing about 2 dozen Tints	..	..	..	..	..	0	3	0
Ditto, ditto 3½ ditto	..	..	..	..	..	0	5	0
Ditto, ditto 4½ ditto	..	..	..	..	..	0	7	0
Ditto, ditto 5 ditto	..	..	..	..	..	0	10	0
Ditto, ditto 11 ditto	..	..	..	..	..	1	1	0

Rough Prepared Paper and Canvas for ditto.

WOLFF'S CRETA LÆVIS PENCILS.

Box, containing 12 Tints	..	..	..	..	..	..	0	7	0
Ditto, ditto 18 ditto	..	..	..	..	..	..	0	10	0
Ditto, ditto 24 ditto	..	..	..	..	..	..	0	14	0
Ditto, ditto 36 ditto	..	..	..	..	..	..	1	1	0

Single Pencils, 6d. and 1s. each.

SOFT SWISS CRAYONS.

	£	s.	d.
Complete Sets, in Mahogany Boxes.. .. .	3	10	0
Half Ditto	1	16	0
Quarter Ditto	0	18	0
Single Crayons each, 6d. and	0	1	0
Bright's Crayons, set of 42	1	1	0

LOUIS GRATIA'S ARTIST CRAYONS, IN SETS.**SUPERFINE LONDON DRAWING BOARDS.**

	3 Sheets.	4 Sheets.	6 Sheets.
	s. d.	s. d.	s. d.
Demy, 18 inches by 14	0 9	1 0	1 6
Royal, 22 „ 17½	1 3	1 8	2 6
Imperial, 28 „ 20	2 6	3 6	5 0

BRISTOL DRAWING BOARDS.

(A second quality of the above.)

SUPERFINE MOUNTING BOARDS.

	s. d.	s. d.	s. d.
Royal, 22 inches by 17½	0 9	1 0	1 6
Imperial, 28 „ 20	1 0	1 6	2 0

MACHINE MOUNTING BOARDS.

	s. d.	s. d.	s. d.
Royal, 22 inches by 17½	0 6	0 8	1 0
Imperial, 28 „ 20	0 9	1 0	1 6

Other sizes of the above kept in stock, both White and Tinted.

DRAWINGS MOUNTED.

Mahogany Easels—Rack, Standing, Folding, Forked, Table, &c., &c.
Deal ditto

Carved Easels for the Drawing Room Table, in Rosewood, Walnut,
Satin-wood, &c.

Mahogany Rack Desks

Sketching Folios, with japanned frame for holding the paper in use.

SUPERFINE MATHEMATICAL INSTRUMENTS.

Newman's Student's half-set of best Instruments, in Mahogany Box, with Scales, &c., 10s: 6d.

Student's whole Set, in Lock Mahogany Box, with Scales, &c., £1. 1s.

Cheap Instruments, Single or in Sets, from 3s. 6d. the Box

Case of Instruments, as supplied to the	£	s.	d.	£	s.	d.	
Military College, Woolwich	2	12	6	&	3	13	6
Ditto, Addiscombe	3	3	0	3	13	6	„ 4 4 0
Ditto, Harrow School	1	17	6	„			
Ditto, King's College	3	0	0	„			

Dove-tailed Boxes, Plain or Brass Bound, as supplied to Her Majesty's Ordnance Office, for Engineer's Drawing Offices, &c., to hold Instruments, Colors, Brushes, &c.

Best Brass and Electrum Compasses, Steel Joints, &c.

Ditto, with Pen and Pencil Joint, in case

Hair Dividers

Bow Pens and Pencils

Spring Ditto

Spring Divider

Pocket Compasses

Proportional Compasses

Ditto, with Adjustments

Drawing Pens, Ivory Handles

Wood and Steel T Squares

Ditto Straight Edges

Ivory and Wood Scales and Rules

Rolling Parallel Rules, various

Ditto, with Ivory Scales

Ditto, in Brass or Electrum

Drawing Pins, Brass or Electrum

Ditto, Large

Lithographic Crow Quills

Complete Sets of Instruments in Mahogany Boxes, in great variety, all of the best make

Dove-tailed Brass-bound Boxes, with Elliott's Instruments, Water-Colors in Cakes, Brushes, Pencils, &c. &c., for hot climates

Mounted Drawing Papers

Ditto, cheap, for mounting Tracings

Section Paper

Tracing Linen and Paper

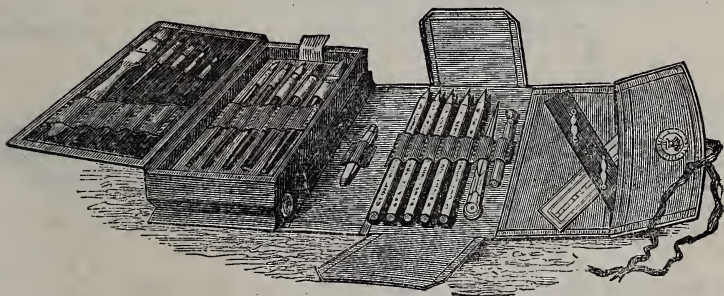
Every article for the Engineer and Architect's Drawing Offices.

Tourists' Knapsacks,

Of the best and most useful construction, fitted up with Block Book of the Creswick or other Drawing Paper, Box of the Improved Moist Colors, Water Bottle and Cups, Case of Brushes, Compasses, Pencils, Knife, Sketch Books, Camp Stool, &c. with room for a Travelling Change. The most useful sizes are 15 by 11 and 14 by 10 inches.

Ladies' Cases,

Morocco, with Block Book of Creswick or other Paper, Box of the Improved Moist Colors, Water Bottle and Cups, Case of Brushes, Case of Pencils, Compasses, Knife, Sketch Books, &c. &c.



Rolling Leather Cases, for the Pocket, with Nine Pencils and Knife, 10s.

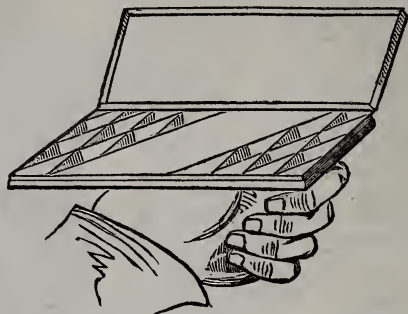
Ditto, with super Camel Hair and Sable Brushes, Washing Brushes, Pencils, Knife, &c., from 12s. 6d.

Ditto, with Brushes, Pencils, and Box of "Improved Moist" Colors, from £1. 12s. 6d.

A great variety of these Leather Cases kept in Stock.

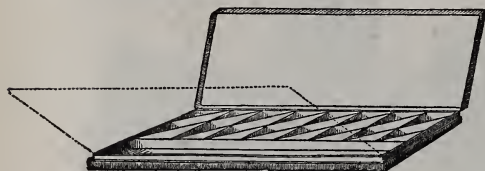
NEWMAN'S JOHN PARRY'S DIAGONAL SKETCHING BOX,

Registered August 19th. No. 3353, Act 6 & 7 Vic., Cap. 65.

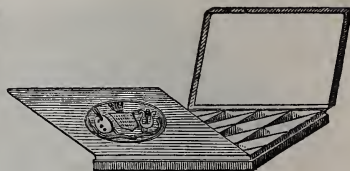


The principle involved in this happy invention of Mr. JOHN PARRY, is, that for comfort and ease the Box or Palette SHOULD BE FORMED AND PLACED IN ACCORDANCE WITH THE NATURAL MOTIONS OF THE HAND, the color being taken up from right to left as in Oil painting; and the angles being in accordance with this natural motion, the Box has not to be continually turned,—a greater mass of colour can be taken up,—none is left in the corners of the cups and wasted,—and the brushes are not destroyed.

The ECONOMY OF SPACE is very remarkable, as Eight whole and Ten half Cups (for the less used but still indispensable colors) can be contained in a space of $4\frac{1}{4}$ by $3\frac{1}{2}$ inches, &c.



No. 5.— $8\frac{1}{2}$ by $3\frac{1}{4}$.



No. 3.— $4\frac{1}{4}$ by $3\frac{1}{4}$.

A FEW OF THE MOST USEFUL SIZES ARE,

			£	s.	d.
No. 1,	$4\frac{1}{4}$ by $2\frac{1}{2}$,	Twelve Cups of the Improved Moist colors	0	16	0
2.	$6\frac{1}{4}$ „ $3\frac{1}{4}$,	Twelve colors, and place for Brushes, Sponge, &c.	0	17	0
3,	$4\frac{1}{4}$ „ $3\frac{1}{2}$,	Sixteen colors	1	2	6
4,	$6\frac{1}{4}$ „ $3\frac{1}{4}$,	Eighteen colors, and place for Brushes..	1	2	6
5,	$8\frac{1}{2}$ „ $3\frac{1}{4}$,	Twenty-four colors, & place for Brushes..	1	13	6
8,	$8\frac{1}{4}$ „ $3\frac{1}{4}$,	Twenty colors, & Improved Thumb Hole	1	13	6

JAMES NEWMAN,
MANUFACTURER OF
PHOTOGRAPHIC COLORS,
Artist Colors, Varnishes, Brushes, &c.

24, SOHO SQUARE, LONDON, W.

NEWMAN'S PHOTOGRAPHIC COLORS,

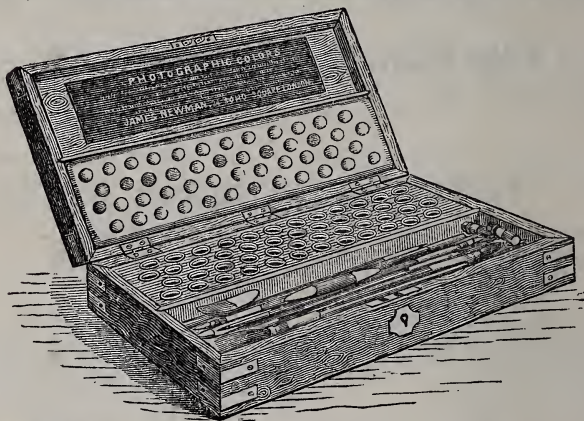
For the Silvered Plate—Glass—and Paper.

These Colors are *prepared by a peculiar process*, meeting every want of the Photographer. They adhere with ease and fulness to the Plate; while, from their transparency, they *colour without hiding* the Photograph, giving a pure, brilliant, and *life-like* effect.

THE FOLLOWING ARE SOME OF THE PRINCIPAL COLORS.

Flesh, Fair, 1 2	3 Complexions	4 Greens
Ditto, Dark, 1 2	Carminé	3 Browns
Lips	4 Yellows	Permanent Scarlet
Lavender	Blue, 1, 2, 3	Carnation
Black	Orange	3 Greys
Crimson	Puce	Silver Grey
Pink	Rose	Violet
Horizon	Distance	Puce
White	Satin White	White (Solarization)
Imperial Purple	Peach	Claret
Mauve	Solferino	Magenta, &c.

In Bottles sealed and tied over, Price 1s. each



Lock Mahogany Box, with Velvet Palette, Brushes, Stumps, £	s.	d.
Shells, &c., and 36 Colors	2	2 0
Ditto ditto with 24 Colors	1	11 6
Ditto ditto with 18 „	1	5 0
Ditto ditto with 12 „	1	0 0
MAHOGANY BOX, with Brushes, &c., 9 Colors	0	10 6
SLIDE BOXES, containing any number of Colors, with Brushes, Stumps, Shells, &c.		
ALBATA AND BRASS-BOUND DOVE-TAILED MAHOGANY BOXES, with extra reserve of Colors, Brushes, Stumps, &c., for hot climates, from	2	2 0

NEWMAN'S SUPERFINE WATER COLORS.

Mahogany Boxes, arranged with Extra Colors, selected for Photographic Portraiture, with Slabs, Sable and Camel Hair

	Brushes, &c.	s.	d.	s.	d.
MAHOGANY SLIDE Box, and	12 Half-Cakes	7	0	to	9 0
Ditto	18 ditto	10	6	„	13 0
Ditto	24 ditto	14	0	„	21 0
Ditto	12 Whole Cakes	12	0	„	16 0
Ditto	18 ditto	20	0	„	25 0
Ditto	24 ditto	24	0	„	31 6

MAHOGANY LOCK Box, with Sable and Camel-Hair

Pencils, Slabs, &c., and	12 Half-Cakes	10	6	„	15 0
Ditto	18 ditto	14	0	„	21 0
Ditto	24 ditto	18	0	„	30 0
Ditto	12 Whole Cakes	16	0	„	21 0
Ditto	18 ditto	22	0	„	31 6
Ditto	24 ditto	31	6	„	45 0

HANDSOME BEST BOXES, with Water Glasses, Sable and Camel-Hair Pencils, Drawer, Slabs, Body-

Color, &c.	12 Cakes.. ..	31	6	„	35 0
Ditto	18 ditto	40	0	„	48 0
Ditto	24 ditto	45	0	„	63 0

MOIST WATER COLORS.

Best Japanned Boxes, with Palette Lid, and a selection of the Improved Moist Colors, arranged for Photographic Portraiture,

with Brushes, &c.	10 Half-Cups	10	6	12	6
Ditto	12 ditto	12	0	15	0
Ditto	16 ditto	15	0	20	0
Ditto	18 ditto	17	0	22	0
Ditto	10 Whole Cups	15	0	20	0
Ditto	12 ditto	18	0	25	0
Ditto	16 ditto	25	0	35	0
Ditto	18 ditto	31	6	40	0

The higher prices of the Water Color Boxes in the second column, are caused by more expensive but necessary Colors and Brushes.

OIL COLORS.

Best Japanned Boxes of Oil Colors, selected for Photographic Portraiture, Palette, Sable & Hog Hair Brushes, Varnishes, Oils, &c.

JAPANNED Box,	12 Tubes, size, $13\frac{1}{4}$ by $4\frac{3}{4}$, and $1\frac{1}{4}$ deep	£1	5	0
Ditto	16 ditto, size, 9 by $4\frac{1}{8}$, and $1\frac{3}{8}$ deep ..	1	5	0
Ditto	16 ditto, size, $9\frac{3}{4}$ by $6\frac{3}{8}$, and $2\frac{3}{8}$ deep ..	1	15	0
Ditto	20 ditto, size, 11 by 8, and $2\frac{3}{4}$ deep.. ..	2	6	0
Ditto	27 ditto, size, 13 by $8\frac{1}{2}$, and $2\frac{3}{8}$ deep ..	3	10	0
Ditto	30 ditto, size, 13 by $9\frac{1}{2}$, and $3\frac{1}{8}$ deep, with			
Double Bottom for Millboard Sketches, very complete		4	4	0

All Articles of Newman's Manufacture are Stamped.

The larger the Boxes in Oil or Water Colors, the more complete the selection of Brushes, Oils, Varnishes, Slabs, Dippers, &c.

NEWMAN'S PHOTOGRAPHIC VARNISHES.

NEWMAN'S POSITIVE COLORING VARNISH, 1s. and 2s. 6d. per Bottle.
Giving depth and transparency to the shadows without lowering the whites, and a surface particularly well adapted for taking color.—(*See Newman's Harmonious Coloring, as applied to Photographs, &c. New Edition, Price 1s*)

NEWMAN'S PENETRATING VARNISH, for Non-Inverted Colored Positives,
1s. 6d. and 3s. per Bottle.

Portraits by this process have a depth and richness equalled only in Oil Painting or Enamel, and are *Non-inverted*.—(*See Newman's Harmonious Coloring, as applied to Photographs, &c. New Edition, Price 1s.*)

Also for Varnishing Photographs on Paper.

NEWMAN'S PREPARATION, for sizing Salted and Albuminized Paper,
1s. 6d., and 3s. per Bottle.

The Albuminized or Salted Papers, washed over with this Preparation, take either Water or Oil Color perfectly.—(*See Newman's Harmonious Coloring, as applied to Photographs, &c. New Edition, Price 1s.*)

In Bottles Sealed and Tied over.

PHOTOGRAPHIC BRUSHES.

Small Camel-Hair, on Sticks, Nos. 1 and 2	1s. 6d. per dozen.
Ditto ditto, No. 3, ...	2s. 0d. „
Sables in Quill	4d. 6d. to 1s. each.
Miniature Brushes	4s. per dozen.
Sables in Albata, very fine	3s. 4s. 6s. „
Camel-Hair Dusters	3d. each.

For Chemicals.

Large Camel Hair	2s. to 4s. per doz.
Bound Camel Hair	6d. 9d. to 1s. each.
Ditto with Silver Wire	1s. & 1s. 6d. each.
Flat Brushes, up to 4 inches (no metal)	9d. per inch.
Ditto in Tufts (ditto)	1s. per inch.
Ditto, 6 Quills in Handle (ditto)	1s. 6d. each.
Ditto, Larger (ditto)	2s. each.
Ditto, in Tin, $\frac{1}{2}$ to 6 inches	9d. per inch.
Round Camel Hair, in Tin	4d. to 2s. 6d. each.

All Polished Handles.

Gold Shells.. .. .	6d. and 1s. each.
Silver Shells	6d. each.
Aluminium Shells (<i>will not change color</i>)	6d. each.
Stumps	4d. and 6d. each.
India-Rubber Blowers	2s. each.

Body-Color, in bottles or tubes, 1s each.

Stereoscopic Slide Mounts, in packets of three dozens, 1s. per packet.
Mounts of every size and thickness. Photographs Mounted.

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Orders from the Country will have immediate attention on receipt of
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MANUFACTURER OF

ILLUMINATING COLOURS,

AND MATERIALS,

Artist Colours, Varnishes, Brushes, &c.

24, SOHO SQUARE, LONDON, W.

(See Illuminating Circular.)

TO THE PHOTOGRAPHER,

In "Dead backgrounds," these "Illuminating Colours" will be invaluable, easy to use, flat and glowing, and full of colour.

NEWMAN'S Illuminating Colours,

IN A MOIST STATE, IN CAPPED BOTTLES,

The Prices are the same as Cake Colours.

THE beautiful and interesting Art of Illuminating, carried to such perfection in the Middle Ages, and which has lately been revived with so much success, is worthy of better Materials than have hitherto been provided for it. Amateurs have produced many beautiful imitations of the Old Masters, but with great difficulty to themselves, from want of proper materials.

ILLUMINATING COLOURS, should as their name implies, be very brilliant, and have great depth and fulness, and yet be perfectly solid, drying with a flat, even surface without gloss. The usual way of obtaining this indispensable solidity, is by mixing an Opaque White in greater or less quantity, with the pure Colour; but this invariably DESTROYS BOTH ITS BRILLIANCY AND DEPTH—(as may be seen by comparing the pure Cake Colour with any of the *so called* Illuminating Colours.)

NEWMAN'S ILLUMINATING COLOURS, are perfectly solid, and being prepared in a very peculiar manner, without the admixture of white, all the depth and fulness of the pure Colour is preserved, and a glowing brilliancy obtained, rivalling or surpassing the finest tint in the old Missal Illuminations.

NEWMAN'S ILLUMINATING COLOURS dry perfectly dead and flat, and are so easy to use, that if the few simple directions which follow are attended to, the Amateur will have no difficulty in producing a *flat, even, brilliant* "Illuminating" effect.

DIRECTIONS THAT *must* BE ATTENDED TO.

SHAKE the Bottle before use, or stir up the Colour with the small rod which is put into all the boxes; take some of the Colour on the brush and work it thoroughly on the palette—the reason for this is that the generality of the Colours being heavier than the mucilage, have a tendency to fall, and if not re-mixed when using, mucilage is taken up instead of colour, and when dry the flatness of surface is not so thoroughly retained, and even in some instances may become covered with minute cracks.

WHITE may be mixed with any of these Colours to produce the Lighter Shades, but they must be very thoroughly palleted together for the reasons above stated.

MAHOGANY BOXES OF ILLUMINATING COLOURS,
Brushes, Burnishers, Shells, &c., complete, from 16s. to £5. 5s.

PREPARED VELLUM FOR ILLUMINATING.

NEWMAN'S PREPARED VELLUM BOARDS.

TABLETS OF PREPARED VELLUM AND VELLUM BOARDS.

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ILLUMINATING BRUSHES.

GOLD, SILVER, AND ALUMINIUM, IN SHELL, LEAF, POWDER, &c.

(For Details see *Illuminating Circular*.)

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Illuminating Plates,

FOR

**Initial Letters, Monograms,
TEXTS, BOOK-PLATES,
BORDERS FOR POETRY, &c., &c.**

THESE Plates will be found far more convenient for the general purposes of Illustration, and less costly than purchasing printed Outlines. The Plate may be used any number of times, and without the slightest difficulty.

Lay the Plate on the paper, holding it with one hand so that it does not shift its place; pass the brush over it, when the Outline will be found quite distinct, however intricate the pattern, which can then be coloured to the taste of the Artist, with NEWMAN'S ILLUMINATING COLOURS (*see Illuminating Colour Circular*) or other materials.

J. N. has a number of beautiful Outlines, prepared from unpublished works in the British Museum and from other sources, Figures of Saints, Borders for Poetry, Initial Letters, Monograms, &c., and any figure or design can be cut to order, either large or small, plain or intricate.

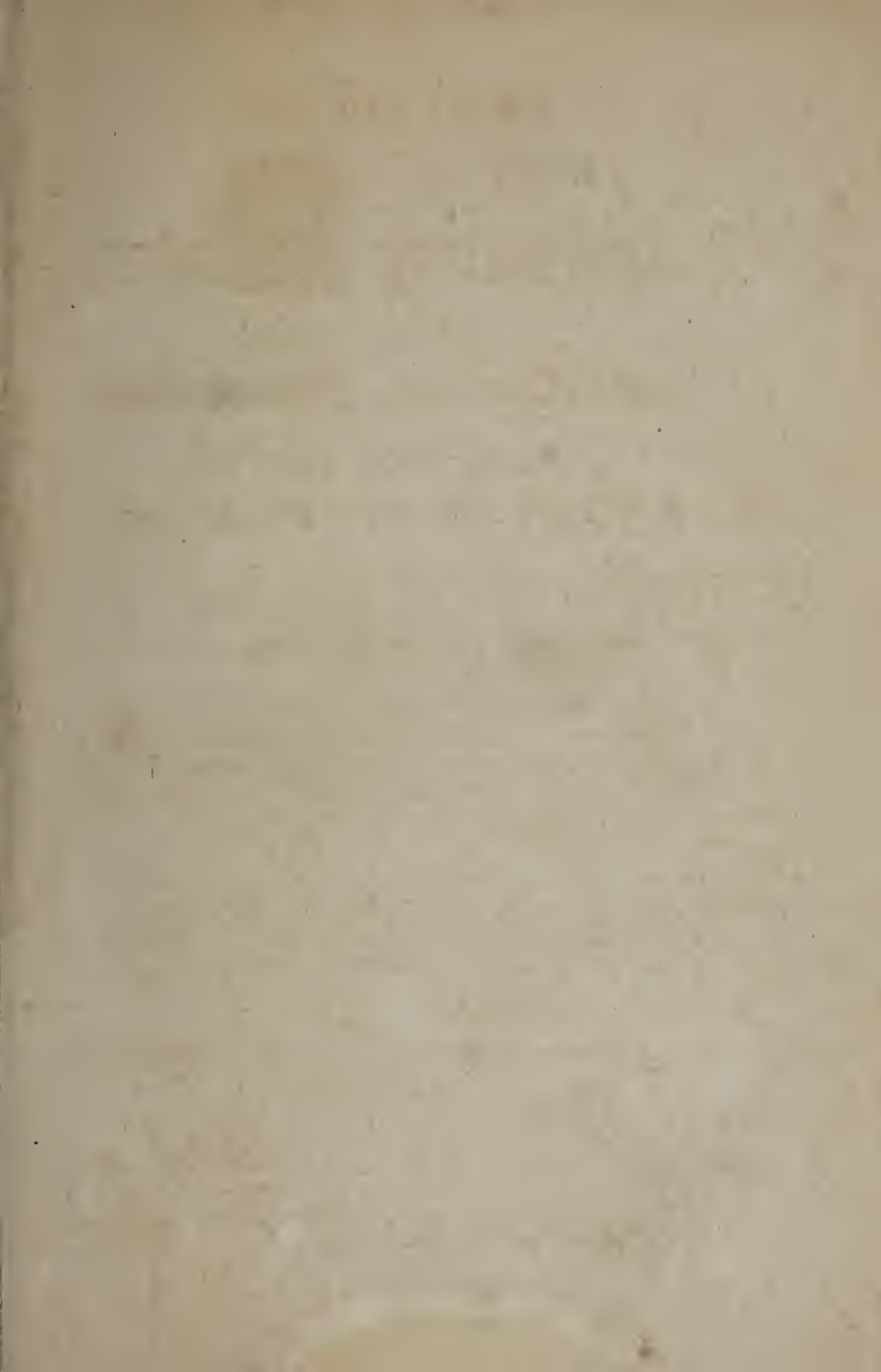
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*Manufacturer of Illuminating Colours, and every description
of Article for Illuminating,*

No. 24, SOHO SQUARE, LONDON, W.

Mahogany Box, with Brushes, Coloured Chalks, &c., for rubbing-in pattern, and
Drawer for Plates 2s. 6d.

**A LARGE SELECTION OF SCROLLS, OUTLINES, AND
DESIGNS FOR COLOURING.**





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